International Management Digest®

O.S.

NOVEMBER 1960
ONE DOLLAR

THE McGRAW-HILL PUBLICATION OF WORLD BUSINESS INFORMATION

...Gross National Product: $61,000-million

...Exports: $11,000-million

...Currency Reserves: $7,000-million

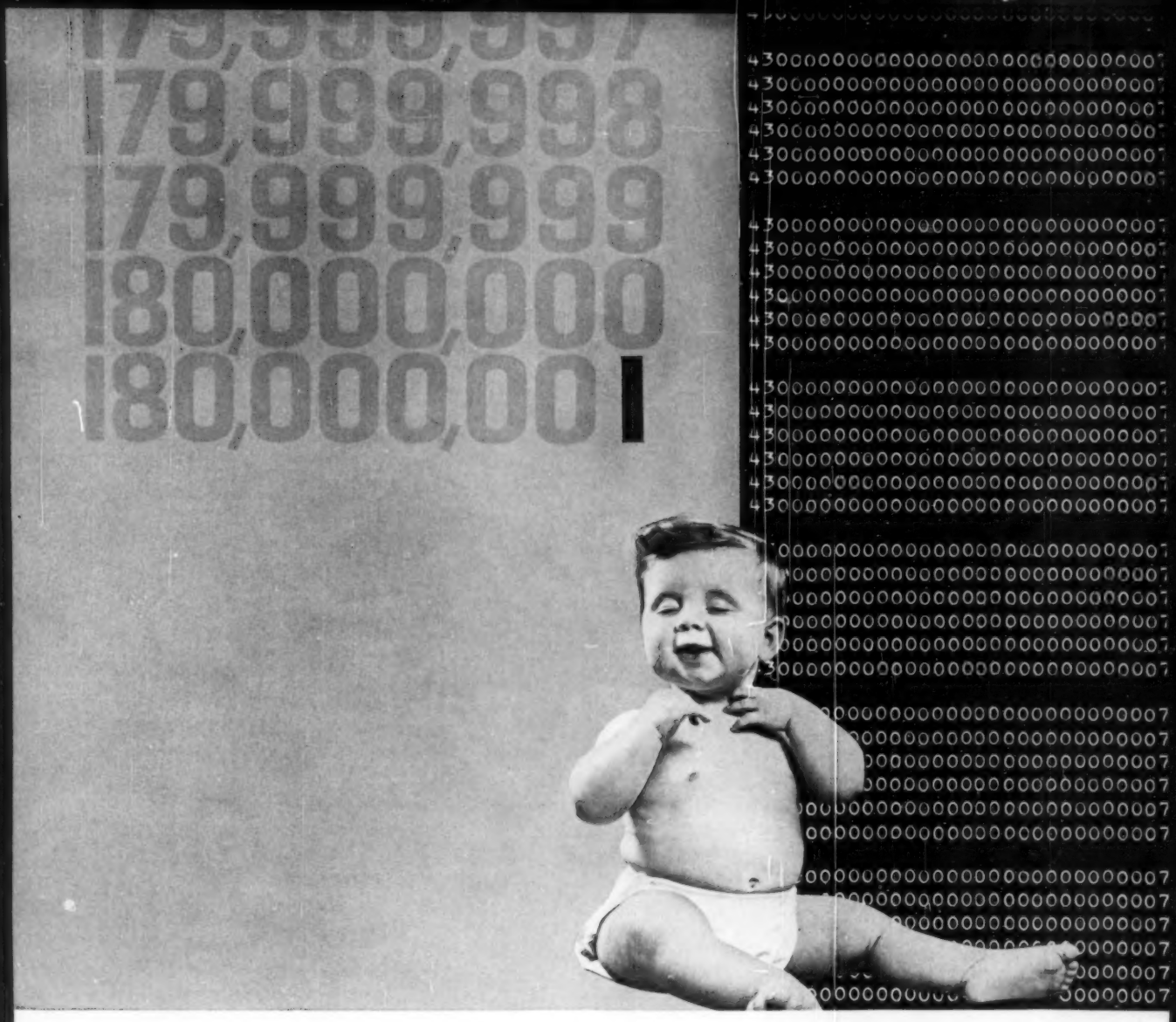
Communism's Second-ranking Power: China becomes a yet more difficult ally . . . . (see World Business)

Executive Salaries: New patterns, delicate questions . . (see Management)

The West's Second-ranking Economic Power . . . ***(see World Business)***

Machine Tools: Automatic controls steal the shows . . . . (see Technology)

Advertising: A stronger force in business — everywhere . (see Marketing)



APPLICATION: **1960 DECENNIAL CENSUS OF THE U.S.A.**
PLACE: United States Bureau of the Census, Suitland, Maryland, U.S.A.
EQUIPMENT: **REMINGTON RAND UNIVAC®** COMPUTER

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American Letter

The U. S. Economy??

The optimists say the U.S. has been in a kind of recession for seven months now, and may be ready to move up and out of it. There has been a "rolling readjustment," they explain, where first one, then another segment of the economy has trouble. The sum of the readjustments leaves business stagnant, with little or no "push." Next year, things should be fine. (Some of the most optimistic insist there has been no recession at all.)

The pessimists see nothing in sight to turn the economy higher, and a lot to turn it lower. Capital spending may be down sharply in 1961, consumer purchases will lag (some pessimists talk of auto production down to 5-million, compared to 6.5-million this year). They fear that a recession, just starting, could be a bad one. Moreover, they worry that even booming West Europe is going to slow down.

The optimists have a strong argument in the way the economy has absorbed some really severe adjustments (look at steel's sad story) and kept operating at a high level. For all the gloom, they point out that 1960 will be the U.S.A.'s biggest year ever, with a gross national product of over $500,000-million.

Eyes on the consumer

The biggest component of gross national product—two-thirds—is in consumer purchases of goods and services. Right now, the American buyer's behavior is wrapped in mystery.

But there are some indicators. The leading private survey of consumer intentions shows no increase in actual plans to buy certain goods. But the consumers' confidence seems higher—they consider now a "good time to buy" whether they plan to buy or not.

Last month a new government survey of the enigmatic consumer was introduced. Based on a much larger sample (20,000 homes) and avoiding consumer attitudes, the report covers buying plans involving specific product groups. It forecasts difficult times for staple durable goods such as autos, washing machines, refrigerators, TV. But it suggests that consumer demand for goods with less market saturation will rise (more expensive phonograph and radio gear, air conditioners, clothes dryers are examples).

What these surveys do not show is the growing share of the consumer's dollar going for education, travel and vacations, medical care, insurance. In the last five years, the percentage of gross national product spent on durable goods has dropped from 10% to 8.8%; the proportion on services has risen from 23.3% to 26%. That is a mighty swing in a $500,000-million economy.

The consumer is being choosy—and cautious. While this may indeed be a "good time to buy" (a buyers' market always is) it may not be a good time to pile up a lot of "pay-later" obligations. Indeed, the fate of the U. S. economy next year may rest on how fast Americans work off their present heavy load of installment debt.

Wall Street waits

The investor is equally choosy—and cautious. And Wall Street stock prices entered the fourth quarter of the year bouncing about at a two-year low.

But there are some glimmers of hope. "Value is beginning to creep back into the market," says Business Week, noting that yields on many top-rated securities are close to 5%, and seem well protected by earning capacity. There is a feeling that Wall Street, in a crescendo of gloom, has already discounted not only international worries but even a mild recession.

But there will be no sustained recovery until the big "institutional investors"—mutual funds, pension trusts, etc.—begin buying in strength. Right now they seem more concerned with **what** stocks to buy rather than **when.** And that is a good sign.

Cotton rides high

The U. S. cotton industry is in better shape now than it has been in years. Its carryover stocks at the start of the current season (August 1) were 7.5-million bales, about the level needed as a hedge against a crop failure or an international emergency. With the present crop estimated at no more than 14.6-million bales, the surplus may be trimmed again.

The improvement stems largely from rigid government production controls and rising exports. And with **cotton textile mills operating at a high rate in most** countries, U. S. sales abroad this season should total 6-million bales.

One uncertainty faces the world cotton industry: The new U. S. Administration will be under severe pressure to change agricultural policies covering acreage controls and price supports. This could change world marketing patterns considerably.

turn the page

Letter from Washington

To the foreign visitor, Washington's mood often is an enigma. This autumn, it is a paradox even to those who live and work here.

The great quadrennial national game of politics, as usual, has oversimplified, to the point of obfuscation, the issues that will confront the new Administration next January. Talk to a Republican government official and you come away convinced—almost—that the nation's posture was never stronger at home and abroad. Chat with a devout Democrat on "Capitol Hill", and you are persuaded—nearly—that U.S. prestige abroad has ebbed to a low, while its immense economic plant stagnates.

Privately, top advisors in both political camps subscribe to neither extreme. Nixon and Kennedy have conceded that they disagree only on interpretation and method, rather than over goals. Both have agreed the U.S.A. is strong. Both also have agreed it needs new policies. Yet, a sense of uncertainty pervades this city.

Take, for example, all the fears and reassurances over the soundness of the dollar. At the World Bank and International Monetary Fund meeting in late September, no U.S. official expressed serious concern publicly or privately that the gold drain foreshadows an imminent weakening of the dollar. On the other hand, none discounted the threat that an economic downturn in the U.S.A. could make those fears come true.

Or, look at the U.S. domestic economy. It is going through a "rolling adjustment," say top administration officials; one that means inventory buying and business' capital expenditures are being cut back—in one industry, then another. The Republicans count on the U.S.A.'s productive capacity, and a continuing high rate of consumer spending to spark a new upturn next year. Still, they concede points the "pessimists" have been emphasizing: steel production barely over 50% of capacity; unemployment close to six-million; cautious consumer buying; the farm surplus problem.

There is less confusion over foreign policies. Both political parties insist that the new Administration will have to "do something" to seize the initiative from the Communist bloc. But nothing very specific in the way of proposals has won bi-partisan support so far.

So, whither U.S. policies next year? This is what Washington observers see ahead:

—The Federal Government will spend more to spur the domestic economy, and to improve its military defense posture.

—A serious recession probably will not materialize.

—Foreign aid will be increased, and re-directed toward more popular benefits such as the schools, housing, and public health projects called for in the new U.S.—Latin American aid program.

—Vis-a-vis Moscow and Peking, Washington may try to update former President Theodore Roosevelt's formula: "Speak softly and carry a big stick." New disarmament talks are likely. But there will be no retreat on Berlin or on U.S. opposition to Red China.

—Washington will place greater emphasis on cooperation with international organizations. The decision to channel economic aid and influence through the United Nations in Africa is an example.

—The U.S.A. will continue to push world trade expansion, fight to keep its own import barriers as low as politically possible. Regional markets and industrialization schemes will get more U.S. backing. So may commodity stabilization efforts. Washington will not do anything to slow American businessmen's investment overseas. But it will not stimulate it either, as long as the balance of payments problem remains (and it is a good bet that it will remain).

Investing in the U.S.

Overseas businessmen's direct holdings of American plant and property is increasing (up about 6% last year). You see it in the recent British and Mexican real estate ventures in New York, following upon Japanese stores and a pulp mill, an Italian takeover of a typewriter firm, chemical deals, and so on.

But the growth appears slow. One reason is that foreign businessmen have been busy building new plant at home. Another is the fear that new competition from a foreign-owned plant would be very quickly met by the Yankees. And there is cost: Despite their capacity problems at home, many suppliers to the U.S. still find it cheaper to import than to make in America.

Not all foreign direct investment shows up on the books as foreign. Many businessmen find it easier to raise funds in the U.S. money market for ventures here. This will continue, certainly as long as U.S. interest rates stay at present level.

Note too that much foreign business activity in the U.S. has been through cooperative ventures with Americans—or licensing deals—where large amounts of money are not involved.

Strike Insurance?

Both management and labor are exploring new ways to build their resources for future conflicts.

Management is leaning towards "strike insurance," as a means of covering fixed expenses during a long stoppage. The railroad industry's plan, worked out with Imperial Insurance Co. Ltd. (Nassau, Bahamas), covers payment of property taxes, interest on debts, pension funds, etc., up to 365 days of suspended operations in a single strike. If this plan is adopted by others, it may weaken the power of strong unions to compel a single employer in a competitive market to heel to their demands.

Meanwhile, there already is some talk among unions of buying their own strike insurance from Lloyds of London.

Mobilizing aid money

The appearance of the new Inter-American Development Bank and the International Development Assn., each with resources of $1,000-million, is another sign of the immense amount of capital being mobilized for the benefit of less-developed countries. While many say "not enough!", there is growing concern about how quickly the recipient nations can absorb the new money becoming available, and how well the assistance-giving banks and funds can avoid overlapping, mismanagement, politics.

Both new organizations recognize these problems. IDA, an affiliate of the World Bank, is designed to make "soft" loans—credits that will not further strain the capacity of the receiving country to repay. (For example, Pakistan's total service charges over the next five years will exceed the amount of loans it has received to date.) IDB promises it will consult carefully with its member governments, and with the other international institutions, to avoid overlapping. And its management insists it will fight hard to keep politics out of IDB decisions (page 17).

And while IDA is supposed to cover the entire world, it will probably concentrate on Asia and Africa, leaving the Americas to IDB (which also will be making some "soft" loans).

Portents from Germany

West Germany will not be pressured into any quick big increase in its aid to less-developed countries. This in spite of the way delegates at the recent financial meetings in Washington, led by the U.S.A., took the Germans to task for not shouldering a larger share of the burden. (Of $18,000-million in loans and grants by 15 industrial countries, 1954-59, Germany provided $275-million, the U.S. $12,000-million.)

But there are signs the Germans will move, however slowly. The Kreditanstalt is getting ready to increase its foreign lending on the model of the U.S.A.'s Export-Import Bank. Most of the money will be "tied" to purchase of German goods, but there will be an untied portion. On another front, Germany is responding to criticism that it is not being a good creditor by considering removal of (1) a turnover tax on imports and (2) a tax rebate for its exporters.

Made for each other?

While the experts argue about how to speed European integration, businessmen are rushing ahead on their own—through an expanding network of intra-European company agreements. Hardly a week goes by without news of a dozen or more mergers, new jointly-owned companies, new "communities of interest" involving production, distribution, research.

How well these arrangements will serve the cause of free competition in Europe will not be known for years. How well they will serve the companies will be known sooner. A leaf from recent U.S. experience is worth noting:

For several years U.S. industry has been in the throes of the greatest merger and diversification movement in history. Corporate mergers have risen from roughly 700 yearly in 1950 to well over 1,000 now. And you begin to hear of more cases where disillusion has set in, where two companies have found that they are not "made for each other" after all.

Problems of personality, of differing corporate aims, of management inexperience, of communications and control rank high in the less-than-successful mergers and agreements.

A trend toward tighter management control over new acquisitions and joint ventures is apparent. And businessmen are looking more carefully at the nature of a new venture—there have been many instances where a company has got into trouble with an acquision that was in a field far removed from its own line of business. Businessmen do not seem so eager now for diversification merely for the sake of diversification.

Opportunities in Nigeria

Nigeria started life last month blessed with a diverse armory of primary commodities—palm oil, ground nuts, cocoa, cotton, bananas, rubber, tin, timber, hides. Diversification helps the new nation in the face of fluctuations in raw material prices.

But Nigeria is determined to industrialize, and you will be hearing more about light manufacturing there. Already there are two cement plants, two big breweries, three cigarette plants, soap-making, canning, modern veneer and plywood mills.

Latest ventures: Nigeria Aluminium Products (a partnership of Aluminium Ltd. and the East Region government) is building a factory to fabricate aluminum roofing and other products sufficient to meet all the nation's needs. And Unilever's United Africa Co. and Raleigh Industries will help the Nigerians build a bicycle plant. Note also that the East Region—considered to be the most economically-advanced area—grants pioneer industries liberal tax concessions. There's no capital gains tax, either.

turn the page

Letter from Paris

Join any French businessman at lunch these days and you will discover how quickly he moves the conversation to this question: Which way is the economy moving—up, down, or not at all? The answer he and his business colleagues volunteer will give you a rough idea of how murky the business scene in Paris is right now.

The auto executive will cluck over the industry's newly-discovered, two-headed problem—a shrinking export market and a tight domestic situation. (He'll curse the American "compact" cars, ask you if you heard the frightening story about Renault Dauphines coming back, unsold, from the U.S.) The man in refrigerators will moan over the near-stagnation in sales. So will the washing-machine chap.

Yet, all the talk around the luncheon table will not follow this gloomy pattern. The man who sells television sets will describe his sales as being brisk as ever. Even radio sales, he will add, are moving at a fast clip. What's more, if you turn to the man in a basic industry, like steel, you will get the same optimistic slant. For instance, estimated steel output this year (17-million tons) is 2-million tons better than 1959—a year when the industry reaped an export windfall due to the U.S. steel strike. The goal of 23-million tons by '65 seems a sure bet.

To understand what really is going on you have to drop in at the Bank of France or at the Treasury. Here you get this sort of briefing: Certainly private consumption is sluggish. But, Monsieur, remember the objective of our economic reform program—to curtail consumption, channel more output into exports, get the franc on a solid footing.

All three of these objectives have—"plus ou moins"—been achieved. For the first time since the early 1950s, the economy is stable. The franc is respected on international money markets. Exports have jumped all along the line. Domestic consumption remains stable.

The crux of the matter, of course, is that it is no longer enough in Western Europe to have a "stable" economy. You also have to keep expanding. France, as a major member of the Common Market, cannot content itself with a gross national product increase of 2% or so when West Germany and Italy, for example, turn in more impressive performances.

Industrial output this year should be above the 3.5% rise turned in during 1958 and 1959—but not by very much. The government is now pushing for an annual expansion of industrial production of 7%. To get this rate, France must press for more exports, and at the same time sell much harder at home. (Should the refrigerator man be so gloomy when less than 20% of French homes have one?)

And what about politics? De Gaulle's Fifth Republic has pushed through an economic program that would have doomed any parliamentary government under the Fourth Republic. Yet few businessmen would deny France is paying a price for this authoritarian performance.

De Gaulle's ambitions to equip France with independent nuclear military power, for example, is taking an ever-increasing slice of the investment budget. Already, France lays out considerably more for defense than do its major Common Market partners.

Here, of course, you uncover the real question in Gaullist France today. Can France expand its industrial plant to keep pace with its partners and competitors, and at the same time finance de Gaulle's military and political ambitions? Most Bank of France officals, in private, will tell you it just cannot be done. Not, at any rate, as long as the Algerian war grinds on. The coming six months may show who is right, de Gaulle or his bankers.

Enter the "OPEC"

A major overhaul of world petroleum production and pricing may result from the mid-September conference of the five main exporting countries held in Baghdad. To this end, the formation of an "Organization of Petroleum Exporting Countries" (OPEC) was announced, with Venezuela, Iran, Iraq, Kuwait, and Saudi Arabia as the founding members.

OPEC already has been hailed in some quarters as the framework for a powerful cartel—something the consumers and the industry itself cannot ignore. For it would control at the start some 85% of the petroleum moving in international trade.

The Saudis and Venezuelans propose a new world oil price structure, based on regulation of production. They would market at graduated delivered prices, just underbidding the cost of competitive fuels. The proposals also would probably mean, in effect, that the oil companies would make more of their profits on crude (though paying more in royalties) and less on refining and distribution.

The difficulties of making any proration scheme work are obvious: The new resources in Africa are being developed rapidly; many independent companies are already in the field; Russian oil exports are growing fast. Yet the oil price structure that has carried the industry through the great expansion of the last 25 years has virtually broken down. Something new will have to take its place during the era of surpluses now at hand. This is becoming more and more obvious since the consuming countries are just not paying the posted prices. And in Europe and Asia, they are increasingly calling the tune.

One immediate result of the conference is likely, however: The oil companies have been warned not to change prices without prior consultation.

Volume 15, Number 11 of INTERNATIONAL MANAGEMENT DIGEST, published monthly by McGraw-Hill International Corp., 330 West 42nd Street, New York 36, N. Y., U.S.A. Subscriptions solicited only from management executives in business and industry. Subscription price $5 (U.S.) for one year. Publication office: 99-129 North Broadway, Albany 1, New York. Second class postage paid at Albany, New York. INTERNATIONAL MANAGEMENT DIGEST and AMERICAN LETTER copyright© 1960.

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VOLUME 15 NUMBER 11

International Management Digest.

WORLD BUSINESS

Reckoning with Asia's Red Colossus. China's "great leap forward" chills world industry.....15

Rx for Imports: More Marketing. Evidence that U.S. marketers still have much to learn.....16

IDB's Great Expectations. Inter-American aid girds for a massive attack on poverty.....17

Will the Dynamo Falter—Or Surge Ahead? An expert looks at Germany's progress and problems.18

Beverage Beans Swamp Markets. Cocoa and coffee surpluses vex many nations.....20

TECHNOLOGY

Tape Control Gives Tools Speed & Flexibility. Modern machine tools move from the aircraft plant to the general utility shop.....22

Americans Rush to Powder Painting. A growing threat to the paint and solvent industry.....24

New Sintering Process Joins the Direct-Reduction Parade. Cheap iron for small users.....27

Needle Workers Try Automation. A pilot plant catches on in New York's garment district.....28

Ions May Be Cause of Metallic Rust.....29

In Brief. News about greaseless autos, rubber magnets, translating machines.....30

MARKETING

Advertising's State of Health. New statistics show that the art is strong and growing.....36

"Triple-Play" in Tool Markets. A U.S. veteran takes on European and Asian partners.....38

Exhibits for the Shopper. U.S. shopping centers grow more dazzling and popular.....38

Du Pont Focuses Research on Customers' Customers. New program helps plastic-film sales..40

In Marketing 42

MANAGEMENT METHODS

Executive Pay Patterns Raise Fresh Questions. Europeans get less pay, more perquisites.....46

Brazil's Managers Take to Seminars. Studies cover profit planning, marketing, costs.....50

The Multinational Corporation. To direct it, a new class of managers must be groomed.....52

In Management 55

DEPARTMENTS

American Letter 1
World Letter 3
Editors' Page 9
New Products 45
Recommended Reading 61
Personal Business 62
Business at a Glance.....63
Last-Minute Memos 64

PICTURE CREDIT: Wide World—p 15

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INTERNATIONAL MANAGEMENT DIGEST (formerly McGraw-Hill DIGEST) Overseas and Latin American Editions is published monthly by McGraw-Hill International Corporation, James H. McGraw (1860-1948) Founder. Circulation in all countries of the world.

Executive, editorial, advertising and circulation office: 330 West 42nd Street, New York 36, N. Y., U. S. A. Donald C. McGraw, Chairman of the Board; Nelson L. Bond, President; Joseph A. Gerardi, Hugh J. Kelly, Harry L. Waddell, Executive Vice Presidents; L. Keith Goodrich, Vice-President and Treasurer; John J. Cooke, Secretary; John R. Callaham, Vice President and Editorial Director; Joseph H. Allen, Vice-President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator.

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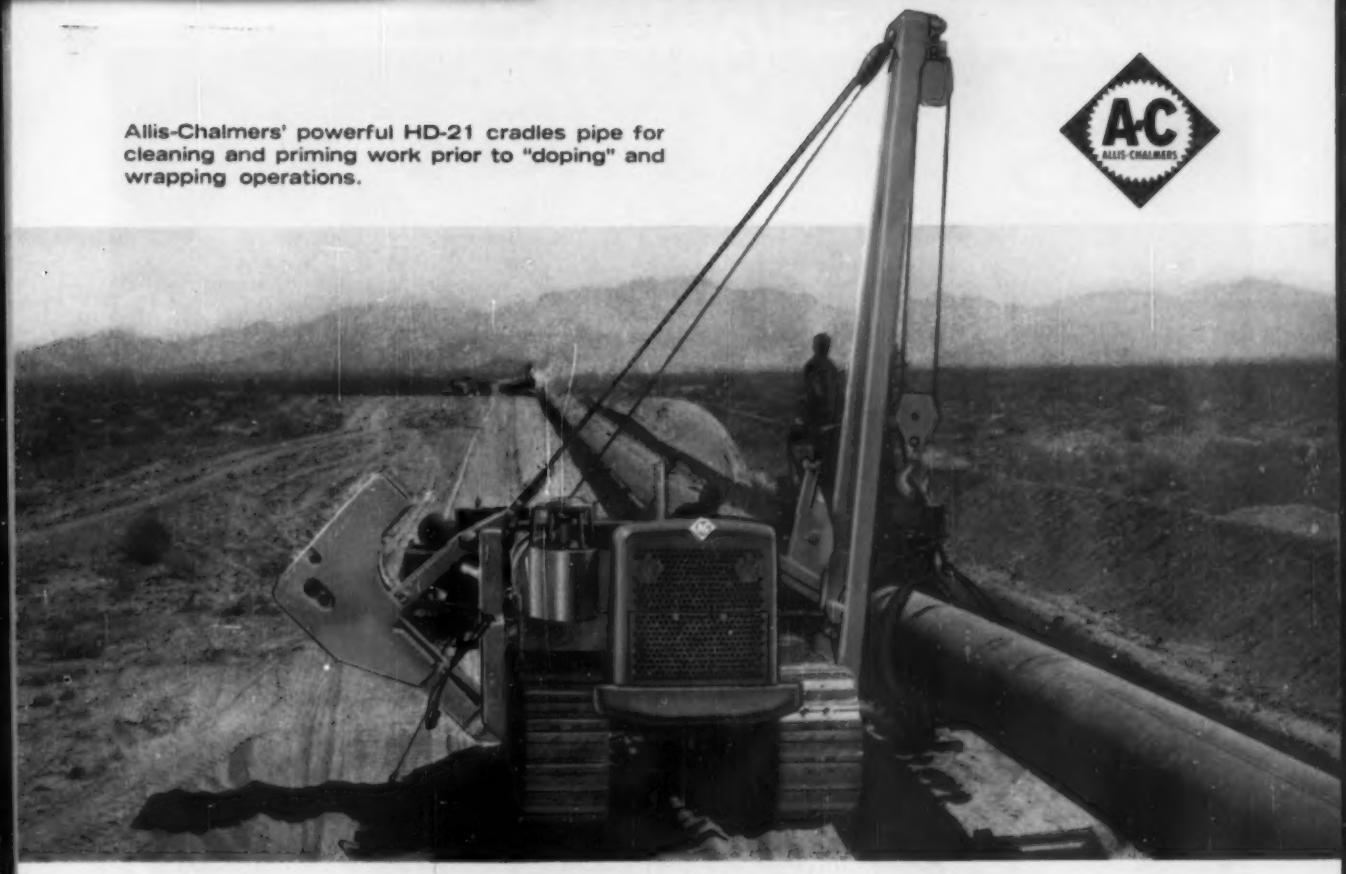

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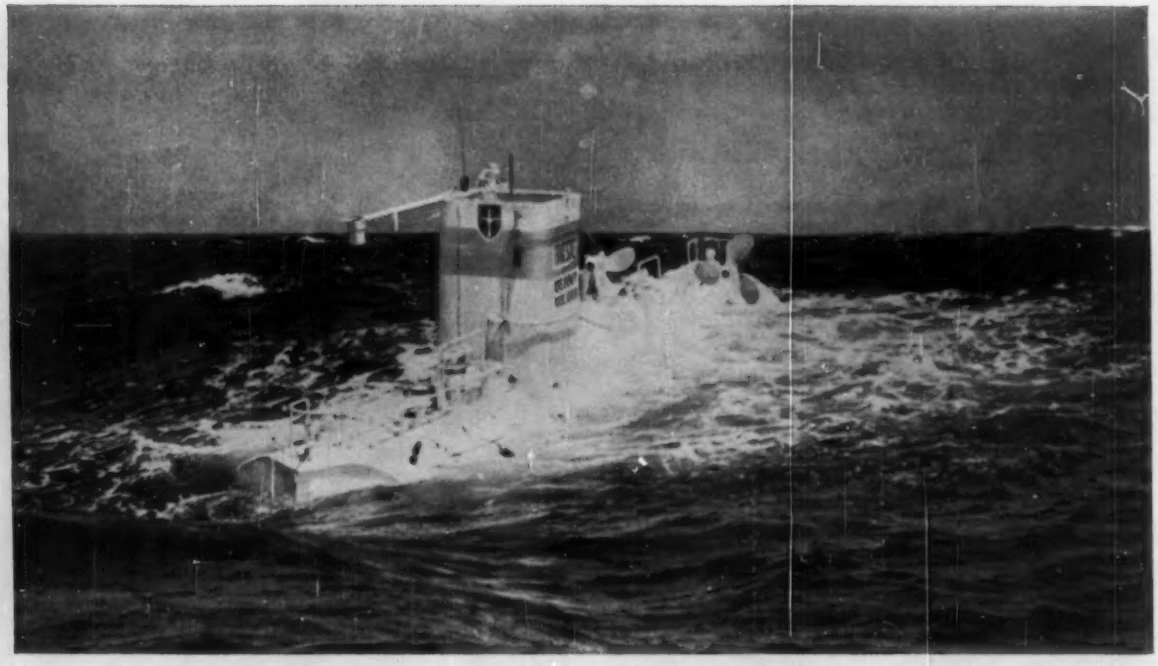

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On the outside of the bathyscaph, protected by a specially made watch-case, was an ordinary ROLEX wrist-chronometer movement. It withstood the same tests as the bathyscaph itself and as a result the following telegram arrived in Geneva on Monday, the 25th of January:

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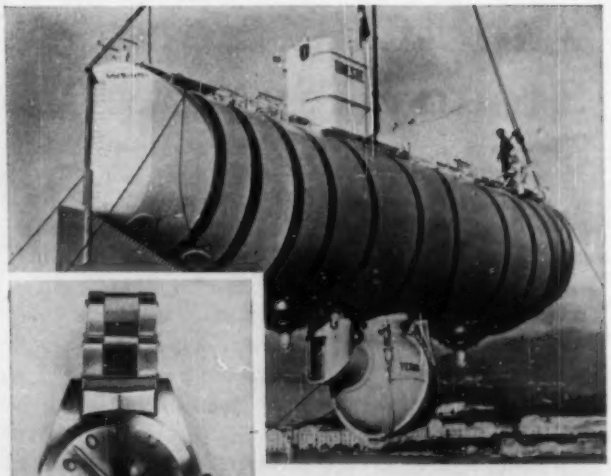

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On Ball-Point Pen Balls

WHAT with all the United Nations comings and goings, desk-pounding, and political hurly-burly here in New York, it has been difficult to keep one's attention on the less spectacular but very important business of international business. Indeed, we were so bemused one morning by the prospect of having tea later in the day with Marshall Tito that we almost failed to note two items that spilled from the pile of editorial mail.

One was a letter from a British reader, Mr. C. R. Schreiber. Did we know, asked Mr. Schreiber, that for all the talk about reducing trade barriers between his country and ours the duty on balls for ball-point pens coming into the U.S.A. is 60 cents per dozen, plus 34%? And that this in fact amounts to 116 times their value, or 4000%? Perhaps, Mr. Schreiber concluded, the tariff negotiations at Geneva can do something about it.

The second item was a newspaper clipping expressing fears that these Geneva sessions, far from reducing barriers during the long negotiations just begun, might actually result in raising some. Seems there is a complex argument over the European Economic Community's new external tariffs—and whether or not they are bound against further rises under the General Agreement on Tariffs & Trade.

Bound or un-bound, a 4000% tariff on ball-point pen balls is, in this enlightened age, horrifying. We can imagine no excuse for it—and regretfully admit that other such anachronisms are probably rooted in the tangled thicket of U.S. trade regulations. But we would suggest to Mr. Schreiber that such things exist in many trading nations, his own included. And we submit that they would not be unless businessmen put them there, and kept them there.

If pen-ball tariffs are important to Mr. Schreiber and his colleagues, think how many persons are affected by lead and zinc quotas, the almost absurd taxes and duties some nations maintain on coffee, the restrictions against manufactured goods from developing countries, the blatant discriminations against a single nation (Japan is the embarrassing case in point). And so on.

The fact is that today's world can no longer afford such barriers. More exports mean more imports, which means more trade—which, in turn, means higher living standards. This is the crucial issue. You can hear it in the talk at the U.N., you can see it in the new faces there this autumn.

Anything that discourages trade (even pen-ball barriers) discourages growth. This is why the debates in Geneva, no less than those at the United Nations, are important, and deserve the most sympathetic attention of businessmen, as well as of business editors.

The Editors

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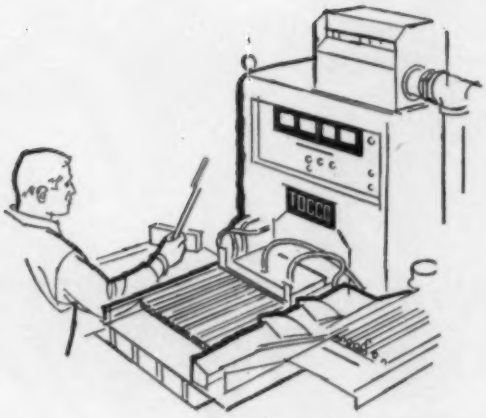

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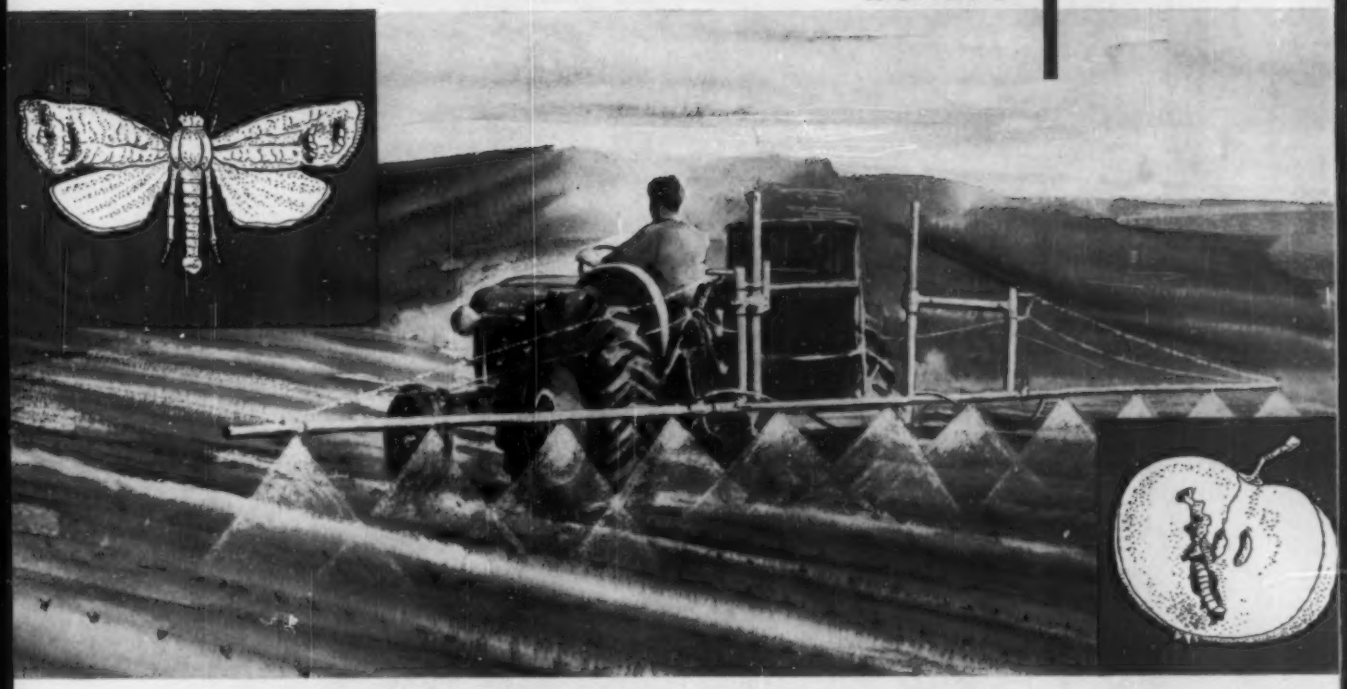

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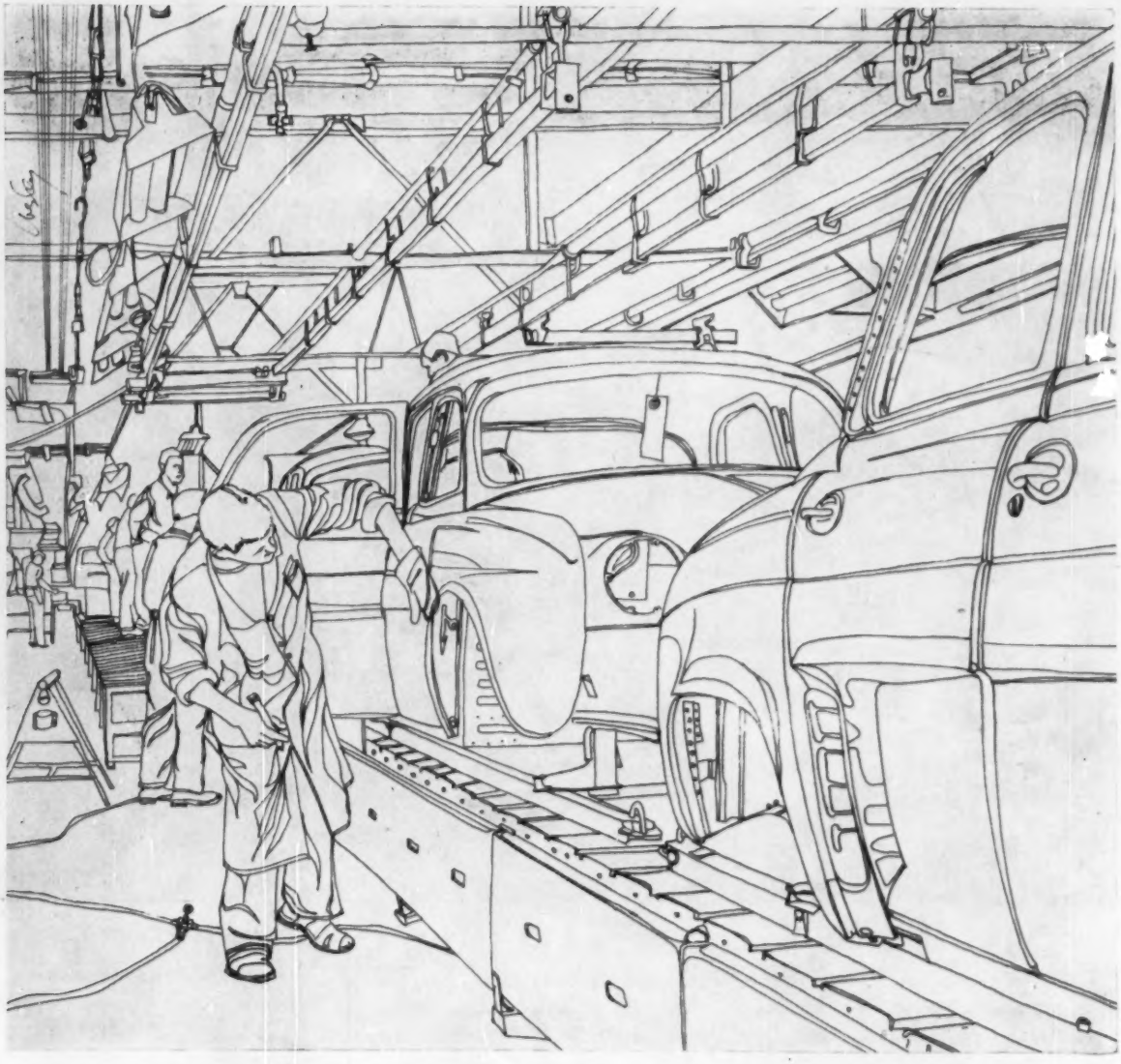

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Mao Tse-tung, wily boss of Communist China, sees himself as revolutionary heir to Lenin and Stalin. The world, as well as Mr. Khrushchev, faces a . . .

Reckoning with Asia's Red Colossus

THE SHADOW of the absent Mao Tse-tung, ruler of Communism's second-ranking power, claimant to the mantle of Communist leadership, looms over the United Nations deliberations in New York. Each delegate, whatever his politics, knows well that sooner or later his nation will have to reckon with the power being forged in China.

The Chinese are in the midst of the mightiest collective human effort in history, merging the labors of hundreds of millions of persons. Despite the strains and the failures of the past few years, China's "Great Leap Forward" to industrialization continues unabated.

• **Astounding**—Within the Communist bloc, China is becoming a more important economic factor. Its industrial output has grown at an astounding 23% yearly during the past decade, say conservative Western observers. By 1965, its industrial production may reach 25% of the U.S.S.R.'s, compared to less than 10% in 1950.

No one knows this better than Mr. Khrushchev. As he cavorted about the U.N. in September, many saw in his performance the compulsions of the sharpening struggle with Peking. They speculated that Khrushchev has embarked on a bold gamble to increase his prestige and support within the Communist bloc and among the Afro-Asian nations—at the expense of China.

• **Isolation**—For many months, the Soviet-Chinese debate has been carried on openly—filling many pages in the Communist as well as in the Western press. And it has become more than a verbal exchange about "master-Leninism", "modern revisionism", and "peaceful coexistence." Moscow has been actively working to isolate Peking politically (the Chinese are hardly impressed because Khrushchev gives lip service to their demand for a U.N. seat), and has been cutting back Soviet financial and technical aid to Red China.

Khrushchev and Mao were scheduled to meet last month (after INTERNATIONAL MANAGEMENT went to press). Some of the cracks in the alliance may appear to be patched over. But it is clear that a real power struggle, not merely an ideological exercise, is in train. The rift is deep—so deep that some very highly-placed Western officials, who only a few months ago discounted it, have come to believe that a real break, Tito-like, is possible.

At the root of the problem are radical differences between present Soviet and Chinese interests.

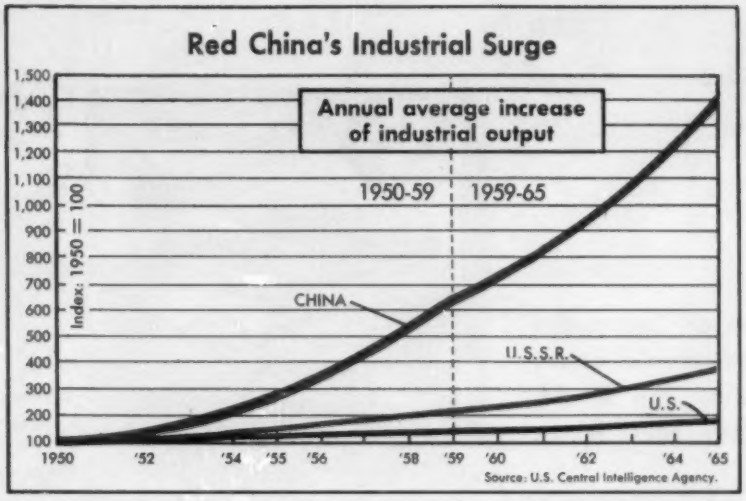
• **Soviet motive**—The Soviet Union is a relatively underpopulated nation with—by Chinese standards—an affluent and contented people. Soviet leaders feel no pressure for territorial expansion as such. As possessors of a formidable nuclear armory they know very well that war would not only kill millions, but would destroy their own hard-won economic gains.

Mr. Khrushchev believes that "peaceful coexistence" is the only realistic policy in a nuclear age. Given peace he can spread Communism by working through the "bourgeois nationalist" leaders of the new nations, building up the U.S.S.R.'s economic capability all the while. This seems far sounder—and safer—than promoting violent Communist-led revolutions.

• **Chinese view**—By contrast, the Chinese seem to believe in violent revolution. They have few restraining diplomatic ties, and nurse a burning grudge against the U.S.A. over Taiwan. Mao Tse-tung needs territory for a population of 670-million, growing 2½% yearly. He needs a "foreign devil" to frighten his people into the disciplined effort required in the Great Leap. Having no nuclear weapons, he may not fully understand their destructiveness (though some Chinese have been reported as ready to accept 300-million dead if it means the triumph of Communism).

According to some reports, Mao has become like Stalin. He is said to despise Khrushchev—as an upstart and a vulgar clown while he, Mao, is the brilliant theoretician who brought 600-million people into the Communist fold and is welding them into a unified, powerful nation where none existed before.

• **Leap?**—How fast this process is moving is hard to evaluate. Some of the enormous production gains reported from China have been scaled down—by the Chinese themselves. Still, most outside observers



guess that the Chinese are showing increases in gross national product of as much as 6% to 8% yearly, and a much higher percentage growth in industrial output (chart, above). Growth is much less in human terms—rising population leaves little room for per capita gain. But this worries Peking hardly at all. The aim is to build heavy industry, not enhance living standards.

The Chinese government has sweated capital out of the masses at a fantastic rate. Progressively larger shares of national product—ranging above 20%—are going into domestic investment. That is a record few highly-developed lands can match; for an underdeveloped country, it is awesome.

• **Sober**—Steel, pig iron, coal, cement production are rolling up big gains. And instead of propagandizing "backyard blast furnaces" as they did two years ago, the Chinese are talking more soberly about technical innovations, automation, better management. Agriculture lags—but the Chinese seem to be having more success than the Russians ever did in persuading the peasant to work.

China is at least a generation away from becoming the tremendously powerful nation "with a high degree of socialist industrialization" that Peking talks of. It is far from self-sufficient—yet. And while there is disagreement on just how important Soviet-East European assistance has been, a complete break with other Communist nations would slow China's progress. But progress would not cease. For one thing, China might become a larger—though scarcely less erratic—market for non-Communist suppliers.

• **World view**—The predominant view in Western capitals is that neither the Chinese nor the Russians believe they can afford to break their alliance. They may be able to avoid a break, certainly over the near-term future.

For the rest of the world, a Soviet-Chinese split holds dangers as well as advantages. A break would destroy the monolithic facade that contributes so much to Communism's intimidating image. Various possibilities to play one off against the other might appear. The Soviets might be so alarmed by the specter of the hostile dragon to the East as to feel obliged to make some real Cold War concessions.

Dangers are harder to assess. The Soviets are widely believed to have exercised a restraining influence on Peking's military adventures. Khrushchev might feel forced to compete even more vigorously with China in aggressiveness. A China pitted against both the West and Moscow might become more virulent.

Finally, isolation of China from the Communist fold might leave Mr. Khrushchev open to grave charges of mismanagement, threatening his own leadership—and the relative political stability of the U.S.S.R. (*Business Week, Sept24, p27; Sept17,p161; Chemical Week, Sept10,p71; The Economist, Aug27, p781; Aug13,p622*)

R_x for Imports: Total Selling

MARKETING, like Olympic men's track and field, is supposed to be an American specialty. Comes now a well-known expert who suggests that many foreign businessmen selling in the U.S. market may be beating the Yankees at their own game—marketing.

The expert is James A. Hagler, executive director of the International Marketing Institute at Cambridge, Massachusetts (IMD—Oct.). In the *Harvard Business Review* for September-October, he reports on a study he made to find out how vigorously American marketing executives were responding to the challenge of imports at home, as well as to the competition Europeans and Japanese are offering in third markets.

• **Question**—Professor Hagler sent questionnaires to the chief sales executives of 300 U.S. companies facing foreign competition. The questions were aimed at finding out what use they were making of the marketing tools at their disposal.

The strong response (45% of those queried) did not reveal any startling marketing "short cuts" or panaceas being developed to meet foreign competition. The study indicated that Americans are generally relying on those specific marketing tools that can be sharpened most easily, rather than strengthening their entire approach to selling—the "marketing mix." Hagler comments:

—Most executives seem to place greatest emphasis on stronger personal selling. In doing so they overlook the complete selling process by failing to give equal emphasis to display, packaging, advertising. (Hagler notes a "rather lethargic" approach to advertising as a marketing weapon.)

—Product planning and marketing research may have been deficient. Prof. Hagler says: "It appears that foreign imports have had success, not merely because of price, but because foreign products have filled certain consumer needs that American companies should have been aware of but were not." He is surprised to discover that

business is only beginning to place greater emphasis on market research and planning.

—When most executives report the success of imports to be due to lower prices, the assumption seems to be that all products have price as a common denominator—that a small Morris car competes with a Cadillac on price, primarily. And while they are using price as the reason for their difficulties, they admit their greatest competitive weapon is service. Hence, the alert domestic companies are placing an increased emphasis on customer services.

• **Lessons**—Despite these reservations, Hagler finds evidence that American marketing men are relearning their lessons. And his respondents stressed that foreign competition is hardly the only—or the primary—reason. Said one executive: "American marketing philosophies, policies, and practices were in great need of complete overhaul before foreign competition made its devastating debut. Now, with an exceptionally price-conscious consumer, we are all forced to tone up our flabby marketing muscles, intensify our efforts to get out ahead of the competition, reduce the fat."

Certainly the present slow-down in U.S. business, and the outlook for still sharper competition in the 1960s, acts as a catalyst, forcing businessmen to take a hard look at their selling. Hagler is hopeful that the reassessment will not be too painful—many of the top executives involved in the problem today were indoctrinated in the "rather tough selling school" of the 1930s.

• **Light**—Hagler reports that more light will be shed on marketing problems arising from international competition by some new studies now going on. For one thing, research efforts indicate that the failure of Americans to keep pace may stem from the tendency of U.S. industries to show a rigid over-concern with their traditional domestic competitors and an unwillingness to take risks to meet either domestic or overseas competition. Unless management gets busy fast, warns Hagler, the "struggle against imports might well be a series of desultory company skirmishes rather than a full-scale engagement." ●

IDB's Great Expectations

Thanks to the "Act of Bogota," the Inter-American Bank has a big job to do.

Felipe Herrera

AN INSTITUTION that seemed to start life as a doubtful political concession opened for business last month amid great expectations. For the change of atmosphere, the new Inter-American Development Bank (IDB) can thank the "Act of Bogota."

Before the September meeting of the American nations in the Colombian capital, many international financial observers considered IDB a relatively unnecessary "little World Bank," grudgingly agreed to by Washington to appease Latin Americans. Then, at Bogota, the U.S.A. committed itself to a sweeping economic aid program, and the Latin American nations pledged themselves to a massive cooperative attack on poverty. The fledgling IDB and its president, Felipe Herrera (picture), were charged with leading the assault.

• **Skills**—Herrera, a 38-year-old Chilean, is convinced IDB can win an important place for itself in the complex business of development banking. He knows something of it—as a former minister in the Chilean government, as a central bank director, as a representative to the World Bank and Fund. Around Washington, no less than at home, he is considered a sound banker and an able politician, skills he will need in abundance at IDB.

IDB was originally capitalized at $850-million for its "hard," bankable lending a la World Bank, plus $150-million for "soft" loans in local currencies, similar to the job assigned to the World Bank's new International Development Assn. Herrera hopes IDB will make its first loan from its own resources before February.

Meanwhile, at Bogota, IDB got the task of administering the U.S.A.'s new fund for Latin American "social" development. This fund will start off with $500-million, and is the dramatic development for IDB—giving it great potential influence

• **Social**—Priorities for "social" projects have not yet been selected, and the first loan is probably a year away (for one thing, the U.S. Congress will not actually advance the money until next year.

Meanwhile, Herrera and his staff are thinking along lines of a pilot project, say, in rural housing that will serve as a model for attracting local and foreign private mortgage financing; a drinking water system; a rural clinic, a school. IDB will handle the fund on a revolving basis;—long-term, low-interest dollar loans will be repaid in local currencies which in turn will be lent again.

IDB control will be in Latin American hands. Though there is little doubt that Washington would exert pressure if it thought the money was being ill-spent, the U.S. wants to stand aside as much as possible. Further, the U.S. hopes IDB will be able to guide U.S. government agencies such as the Export-Import Bank in their direct lending to Latin American industrial projects, which is supposed to rise substantially. Some expect a growing advisory role for the IDB in such controversial matters as regional trade schemes, commodity prices, U.S. imports.

All this could place IDB in the midst of uncomfortable inter-American quarrels. Felipe Herrera expects the IDB will face its share of disagreements, though he insists the Bank is not a policy-making, political organism. But he admits that if IDB wins confidence by its handling of the social fund, it could have an important influence on business and economic development in the Western Hemisphere. ●

WEST GERMANY

Now the Free World's second economic power

Will the Dynamo Falter—

For over three years, Morrie Helitzer, McGraw-Hill's chief correspondent in Bonn, watched West Germany surge to a position of strength and prestige. Just returned to the U.S.A. to accept a fellowship for advanced studies in world affairs, he brings with him this special report for the readers of INTERNATIONAL MANAGEMENT.

TO THE LONG-TIME foreign resident, the commuting businessman, and the freshly-arrived visitor alike, the Federal Republic of Germany in autumn 1960 has the look, feel, and smell of power. Fifteen years after World War II, West Germany—by most yardsticks in use today—has become the mightiest economic force in the West after the U.S.A.

For those who demand statistical proof, West Germany's steady climb past the United Kingdom in exports, central bank reserves, steel and automotive production presents unblinkable evidence. Physical confirmation is everywhere: in the old strongholds of the Ruhr, the automotive centers, the chemical and electrical equipment plants; in the burgeoning network of highways, power lines, pipelines and refineries; even in the shipbuilding cities of Hamburg, Bremen, Luebeck and Kiel, where the boom is less sturdy. Wages are rising, hours are falling, and economists are graphing productivity against costs, costs against population growth, and wondering just how the boom will hold together.

As production mounts, the German worker and white-collar employee are undergoing external transformations. The motor-bike or scooter he traded for a baby car a few years ago now is being replaced by a Volkswagen-class auto; washing machines, TV sets and refrigerators now cram apartments; and wanderlust Germans are spending more for holidays outside the country than visiting tourists bring in.

At a political level, the evolution has gone far enough to force the Social Democrats Party (SPD) to forsake its nationalization and socialization programs and shift unmistakably nearer Chancellor Konrad Adenauer's middle-of-the-road Christian Democrats. And the SPD has underlined its anti-Communist position by formal support of NATO and selection of Willy Brandt, West Berlin's fighting mayor, as its candidate for chancellor.

THE PARADOX of West German success has been its achievement on a territory little more than half that of Hitler's Third Reich and inhabited by three-quarters the population of all-Germany in 1937. The problem today is not the *lebensraum* for which Hitler thundered but finding more hands to run the mills and factories.

What does it mean? Where is it going? "Frankly, I can't explain the operation of the German economy," said a Swedish trade expert at lunch not long ago. "We've heard about the self-discipline of German trade unions, but now their wages are among the highest in Europe. Hard work and efficiency are bywords, but I've seen the line of Volkswagen start and stop in a way that would never be tolerated at Volvo."

"Rigid fiscal policies," the British complain. Why isn't Germany a better creditor? Why doesn't she raise the value of the Deutschemark? Occasionally the Americans add a word: Aware of how their massive postwar assistance triggered Germany's recovery a decade ago, they question the paltry development aid Bonn now offers to others. But the fact is that, quite apart from the German self-righteousness in defending the taut ship that they run, their manufacturers in most cases are able to satisfy both home and foreign demand to a fuller degree than their British counterparts.

But German private investment abroad is respectable in size and growing, and sooner or later, government aid will move also. Furthermore, the obverse side of increased German capital export is increased German competition. There is even an unvoiced suspicion that if the Germans increase the value of the D-mark—highly improbable at this stage—they will eventually turn this to an advantage as well.

Even Germans are not fully aware of how far their country has come since 1945. They tend to talk about Germany as being "small", in comparison with wealthy U.S.A. Part of this is hypocrisy. Another part is the fruit of a deliberate policy of official modesty: *sotto voce* in world affairs, in exchange for political and economic sovereignty.

THE MAN RESPONSIBLE for the ground-line of Germany's new international policy is Konrad Adenauer, already 73 when he became the Federal Republic's first chancellor in 1949. From a combination of political instinct and personal persuasion, Adenauer chose as the cornerstones of his nation's foreign relations unswerving alliance with the U.S. and friendship and cooperation with France.

Both have paid off handsomely. The U.S.-NATO alliance may have saved West Germany from being bludgeoned or subverted into the Communist camp in the early 1950s. The rapprochement with France may prove the basis for a future United States of Europe.

Adenauer's firm government hand and the rapid progress of the Common Market place West German economic strength today in a different perspective than it might be were it undilutedly nationalistic in outlook. Within a community of 165-million people with a Gross National Product of $170,000-million, Germany's popu-

or Surge Ahead?

lation of 52-million and estimated GNP of $61,000-million appears formidable without being alarming. At the same time, expected production in 1960 of 2-million automotive units, 35-million tons of steel—plus anticipated exports of over $11,000-million—spells first place economically within the Community of Six, not second to France.

West German's leading business figures today are a mixed lot. At the top are the old standard-bearers: Krupp, Siemens and Flick. But of the trio only old Friedrich Flick is the personal mastermind of a multi-industry empire. Both Alfried Krupp and Dr. Ernst von Siemens are more figurehead than king in their respective realms of heavy engineering equipment and electro-technical machinery. In Krupp's case, the power-wielder is Berthold Beitz, the most notable member of the non-owner, super-manager class that has sprung up since the war.

Among newer men in other leading firms, both the self-made kingpins and managers are in evidence. Max Grundig built his booming electronics firm from a bicycle repair shop in southern Germany. Willy Schlieker parlayed his wartime experience as a "boy wonder armaments czar" into the most modern ship-building firm in the country. Hans Guenther Sohl, directing Thyssen steel, and Hans Boden, president of Allgemeine Elektricitaets Werke (AEG), both belong to Beitz's class. Neither individually nor collectively do these men appear bent on creating an economic colossus dedicated to political-military adventure.

YET A RESTIVENESS is apparent in the land. Chancellor Adenauer voiced one facet of it when he reminded the Germans last year that they still had a "price to pay" for World War II. Ludwig Erhard, whose very name and face conjures up recovery and good living, expressed concern not long ago about German preoccupation with material well-being alone. And Carlo Schmidt, the intellectual leader of the Social Democrats, but respected as well by the CDU, has worried aloud about the vitality of the new German democratic roots, irrespective of party.

Why this subterranean uneasiness should exist is moot. Some feel it stems from the very rapidity of German recuperation. If a thoroughly defeated nation like Germany could marshall exhausted energies and break into full gallop with scarcely a missed stride, then its mainspring of national strength must be very powerful indeed, and who can tell where it may be directed in the future.

The U.S. businessman appears to be less laudatory of West Germany today than he was when the "German miracle" was in full bloom. It may be that he has just run out of bouquets, or that he is less generous now that the German is a tough competitor. But more than one American visitor, returning to the country after three or four years absence, claims he finds cockiness and condescension now a part of German sympathy for U.S. economic and political difficulties.

Despite their anti-Communism, West Germans do a brisk 6% to 7% of their trading with the Communist bloc, including unrecognized East Germany. Last spring Adenauer angrily rebuked industrialists for their beaming camaraderie with East German officials at the Leipzig Fair. More recently, Economic Minister Erhard invoked a "voluntary" ban on further West German participation at Leipzig as long as the East Germans continue restrictions on traffic to Berlin.

In his continuing battle to prevent diplomatic recognition of East Germany, Adenauer's strongest weapon has been economic. Guinea pulled back on an exchange of ambassadors with East Germany because of the assistance that Bonn could offer or withhold.

Inevitably, developments in West Germany hinge on its elder statesman. "But Adenauer is 84," say many. "If he dies tomorrow, who will succeed him?"

The best guess is that if it is before the elections in September 1961, it will be Vice Chancellor Erhard. If it comes after the election, Adenauer would like it to be someone else. The chancellor's principal objections to Erhard is his belief that he lacks political acumen. "It's nonsense to claim that the old man dislikes Erhard," a close Adenauer associate said recently. "If Adenauer didn't like Erhard, they couldn't have worked intimately together for 11 years."

The dark horse is 45-year-old Defense Minister Franz Josef Strauss, a Bavarian whose political canniness Adenauer thoroughly respects, but whose impulsiveness disquiets the old Rhinelander. A cabinet member for the past eight years, the longer Strauss continues without rocking the boat the more solid his prospects are likely to become.

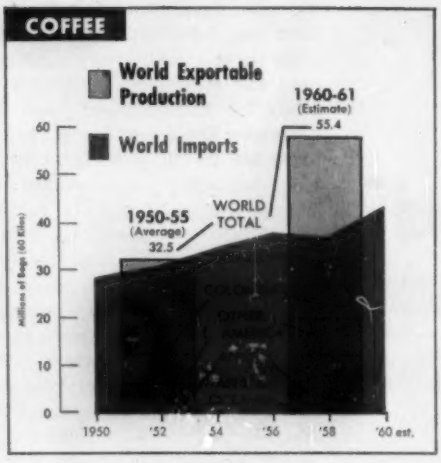
TWO INCALCULABLES are at work, largely outside the control of West Germany, when one tries to gage where the country is going in the next decade. First, there is the unknown of economic development in the West as a whole. A decisive surge ahead of the Soviet-Sino bloc would broaden and reinforce the stability of all non-Communist nations. Conversely, a major depression would invalidate most current prognoses.

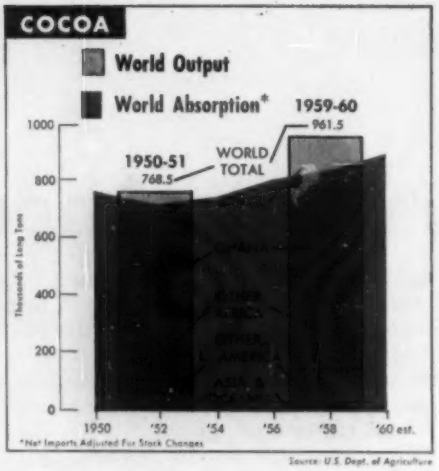
Secondly, there are the unpredictables of the Atlantic community. At its optimum, the coalescence of Britain, France, and Germany into a strong European federation, inter-dependent with the U.S.A., would provide massive ballast for both West German and French democracy. On the other hand, a splintering of Western energies, with the U.S. retreating behind a shield of ICBMs and cruising satellites, could result in a cave-in under Soviet pressure.

At 84, Adenauer accepts the fact that he will probably be working at his desk at the Palais Schaumburg one moment and dead the next. Because he is too old to indulge in long-range planning, his approach is pragmatic: The longer the alliances with the U.S. and NATO last, the closer Germany and France move toward an operating West European community, the better will be the chances for survival of democracy in West Germany when her hour of challenge comes. ●

OUTPUT v. DEMAND:

COFFEE struggles under its mountainous glut, threatening both Latin and African producers. COCOA, in better shape by far, but shows signs of expanding surplus.





Beverage Beans Swamp Markets

THERE IS MORE to coffee and cocoa than a stimulating beverage, a tasty piece of chocolate. They represent worldwide industries, a significant segment of international trade, and a critical source of foreign exchange to some of the most important—and today most troubled—areas in the world, Latin America and Africa.

The common economic interest for much of Latin America and newly-independent Africa can be measured in bags of coffee and kilos of cocoa. Continuing overproduction of coffee in Latin America is compounded by rising output in Africa, creating tremendous pressure on governments to stabilize prices. Cocoa could pose a similar (though lesser) problem if world consumption does not keep pace with Ghana's move to step up production sharply.

The dilemma is a cruel one: Both Latin America and Africa feel they must sell—at a good price—more coffee and cocoa to spur the diversification of their economies.

• **Long-term**—What to do? Long-term solutions, not stop-gap price stabilization programs, are the obvious answer. How to find them now preoccupies trade officials in both producing and consuming nations.

I. Coffee

The work of the Coffee Study Group, 33 countries representing many of the producing and importing countries, is encouraging. Since its establishment two years ago in Washington, it has undertaken exhaustive studies of the surplus problem. And within a few months, according to officials of the Pan-American Coffee Bureau, sections of an important report will be released. There are hints that production controls will be strongly recommended.

• **Still more**—The chart (above, left) clearly illustrates the surplus problem. In the past few years, world exportable production has exceeded imports by consuming countries by a considerable margin. The 55-million bags predicted for the 1960-61 marketing year, and the still larger crop expected for 1961-62, could make matters even worse. Note how world imports now hover around 43-million bags, rise more slowly than production. The high duties and internal taxes on coffee in Europe are partly responsible (the retail price in West Germany is equivalent to $2.40 a pound, compared to $.70 in the U.S.A.).

Latin Americans, who produce over 80% of the world's crop, are especially worried about the carry-over problem. Brazil, Colombia, Costa Rica, El Salvador, Guatemala, Haiti, and Nicaragua depend on coffee for more than 50% of their foreign exchange earnings. Some of the emerging African nations, too, worry about their rising stake in coffee trade.

• **ICA**—To maintain price stability while the problems of surpluses and production controls are hammered out, the work of the International Coffee Agreement (ICA) in maintaining export quotas among member countries is critically important. At the end of September, this group — composed of Latin American nations, Portuguese African colonies, and franc zone nations in Africa—met in Washingington to renew the pact for another year. The talks were hailed as the most successful export control negotiations to date. The main reason: wider African participation. For the first time, the British African colonies of Uganda, Kenya, and Tanganyika formally joined ICA. As a result, 93% of world production now is under export control. (Ethiopia, ex-Belgian Congo, India, Indonesia, and Yemen still remain outside the pact.)

The British undoubtedly agreed to join this year because of assurances that production controls would be seriously considered in 1961 on top of—or in place of—current export controls. The new African nations joined because the previous relative advantages they enjoyed in the world market may be disappearing. Why? As techniques for making "instant" or soluble coffee improve, the stronger African beans are finding more competition from Latin American grades. African sales last year illustrate this story: For the first time African producers experienced a greater price decline and larger relative surpluses

than their Latin American competitors. To this end, Africans are setting up their own coffee group to improve price levels.

II. Cocoa

In contrast to coffee, cocoa is primarily an African problem. As the chart shows, Ghana is the world's largest producer, and cocoa accounts for 60% of its export income. Nigeria, the Cameroons, and the Ivory Coast Republic are other leading African producers. Latin American output is on a much smaller scale—except for Brazil.

World production for 1960-61 will come near last season's mark of close to one-million long tons. Allowing for a much larger carryover (about 365,000 long tons) and a slight dip in Brazilian output, total supplies may be 7% or 8% higher.

• **More sales**—Rising consumption, however, may lessen concern about the "buoyancy of demand." Gill & Duffus, Ltd., cocoa traders, foresees an increase in world consumption of between 5% and 10% over 1959-60, roughly on a par with projected production.

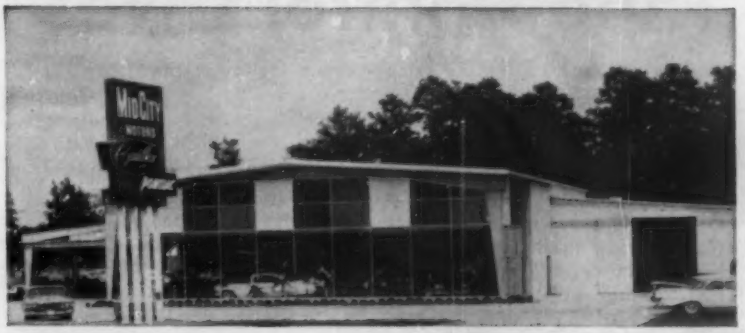
Still, large carryover stocks present a bearish element in the cocoa outlook. They could exert further pressure on prices. Much depends on how much Ghana expands production. Ghana's Ministry of Agriculture has launched a large technical assistance and modernization program among its cocoa growers.

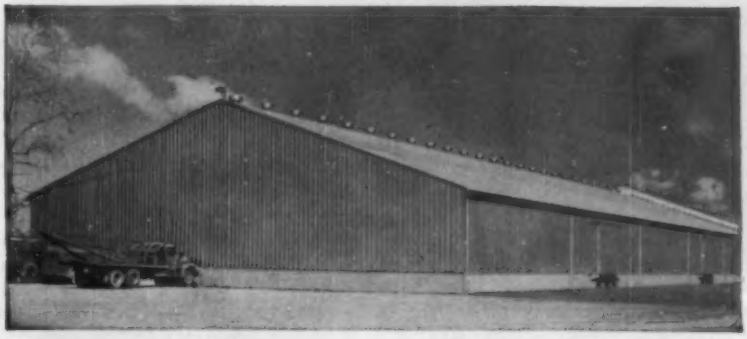
In spite of the price pressure that may build up, there is no international price stabilization effort for cocoa along the lines of the coffee agreement. Brazil and Nigeria have proposed such a plan, and have held talks with Ghana.

Nothing concrete has yet emerged. The experts say only a sharp price decline would move Ghana into an agreement. They also maintain that Ghana's stand will not necessarily be undermined by successful Latin efforts to obtain wider African participation in ICA. The parties involved—as well as the products—are different.

• **East sales**—A way out for the Africans is larger sales to the Communist bloc. There are strong hints that the Soviets and East Europeans will buy more cocoa this year—now that they have their political sights on Africa. ●

Butler Buildings





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● TECHNOLOGY

Tape Control Gives Tools Speed

NUMERICAL CONTROL is moving rapidly into the machine shop. Until recently these highly sophisticated systems—which control machine tools by tape and punched cards—were confined to the missile and aircraft industries. Now they are appearing in increasing numbers in automotive and general utility shops.

• **Emphasis on Controls**—You saw evidence of the advances being made at trade shows recently held in both the U.S.A. and Europe. The biggest of them all was the $25-million Machine Tool Exhibition in Chicago—the first held by the U. S. industry since 1955—where 79 numerical-controlled tools were part of the exhibit (photos). Held concurrently at Chicago were: the Production Engineering Show, featuring more numerical controls and thousands of tool accessories and supplies; and the International Machinery Show, which was devoted largely to imports.

Across the Atlantic, at about the same time, were the Swiss Industries Fair, at Zurich, and the German Machine Tool Fair, at Hanover. Both emphasized control mechanisms. At the Hanover fair, among scores of advanced tools, was a milling machine designed by Germany's Droop & Rein and fitted with numerical controls by Britain's E.M.I. Electronics Ltd. that actually anticipates errors—and stops the machine before a workpiece is damaged.

• **Low Cost**—Visitors at Chicago's Machine Tool Exhibition saw a variety of exacting tasks being done by numerical controls. They were surprised at the low cost of some of the control systems—about half of them ranging from $7,000 to $15,000.

Improved systems at the world's shows, however, were not confined to numerical control. They extended from various forms of automatic control to simpler, easier-to-operate hand controls.

Machine-tool builders seemed to have three aims in turning to better controls: (1) greater flexibility in machine operation; (2) reduction of the handling required in repeated operations; and (3) a more complete job for individual machines.

• **Tool Changers**—Several machine tool builders have developed systems for minimizing time losses during tool changes. Some of these merely indicate the next tool to be used by programmed numbers or signal lights. Other systems automatically move tools from the storage magazine to the work station.

Best known among the automatic tool changers are those on Kearney & Trecker's miller and on Wiedemann's turret punch press (photos). Also shown in Chicago was a Sundstrand Corp. machining unit that changes tools quickly from holders mounted vertically in a 20-station drum above the spindle head. When tools are to be interchanged, the drum is moved under the raised spindle; the used tool is eased into its numbered position, the drum rotated, the new tool drawn up into its chuck, and the drum withdrawn to clear the rotating spindle.

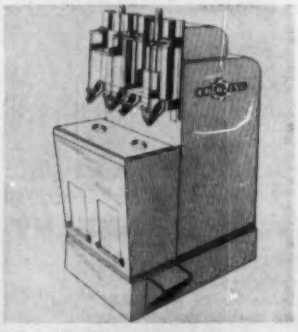
Machine tool users are showing increased interest in tracer controls, and many lathes now are equipped with some form of duplicating system. About 50 tracer systems for lathes, shapers and milling machines were seen at Chicago. They ranged from simple hand-control hydraulic tracers to systems operating with constant feed, constant speed, and combined with numerical positioning.

Emphasis on building-block construction was also evident at the Chicago Exposition. A unit built by Cleveland Hobbing & Machine Co. is made up of components that can be put together to form chuckers, turret lathes, profilers, threading lathes.

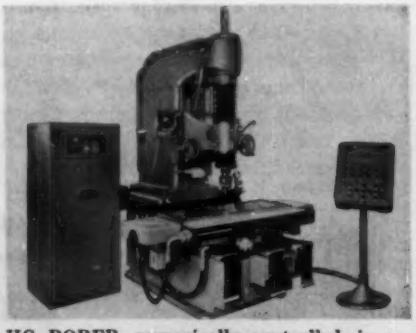
• **Drills, Millers, Borers**—Turret drills in all shapes and forms were displayed at Chicago—many of them numerically controlled. Two companies introduced turret drills with three-axis controls. Besides X and Y axes for positioning the table they have a third (Z) axis for controlling hole depth.

Automatic control and stronger and smoother construction are featured on the newest milling machines. Exhibited at Chicago were many tracer-controlled mills, and many with provisions for automatic cycling built into the machines.

Landis Machine Co. demonstrated a variety of thread rollers at the Exposition. One of these machines, with segmental dies, rolled



BROACHER: rams move in opposed directions. ***Colonial B&M.***



JIG BORER, numerically controlled, is accurate and fast. ***W. B. Knight Mach. Co.***

EXTRA HEAVY DUTY LATHE offers 36 spindle speeds. ***Sidney Machine Tool Co.***

& Flexibility

two threads of the same or different diameter and pitch in one pass.

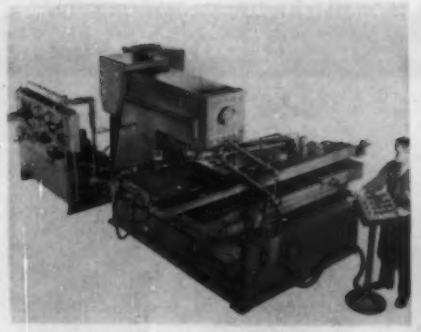
Boring machines have become more accurate and more rigid. There were 13 boring machines at Chicago using some form of numerical control.

• **Foreign Trade**—Machine-tool building is becoming increasingly a world industry. You saw evidence of this in the many Americans visiting Hanover, and in the 1200 Latin Americans, Japanese, and Europeans sizing up the three shows at Chicago.

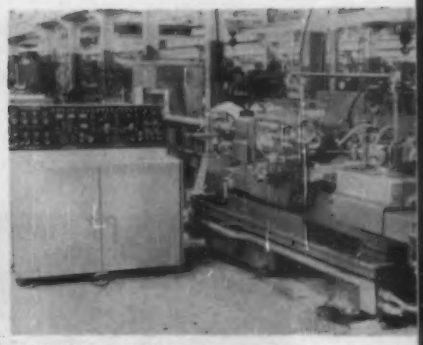
And experts say that more big tools will be moving from country to country in the future. Europeans and Japanese will be buying more U. S. tools, say industry sources, partially because of the fine tools available but also because their own output is not always able to keep up with quickening local demand.

But machine-tool imports also are making headway in the U. S.—a fact that worries many domestic producers. One industry spokesman estimated that 35% to 40% of U. S. tool purchases now come from abroad.

Some U. S. producers are themselves financially involved in this import business. Shown by U.S.A.'s Pratt & Whitney at Chicago, for example, were millers and borers made by Japan's Mitsubishi under license from Italy's Innocenti. Pratt & Whitney also are importing advanced machine tools made in France and Great Britain. (*American Machinist/Metalworking Manufacturing, Aug 22, Sept 19*)

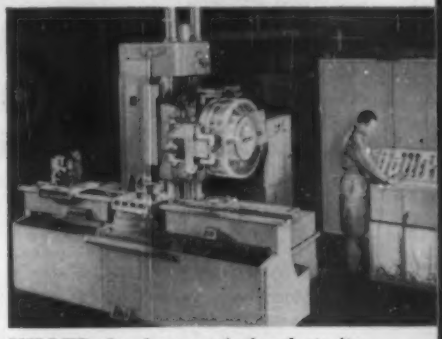


PUNCH PRESS is numerically controlled, changes tools, locates and pierces holes at 60 per minute. *Wiedemann Machine Co.*



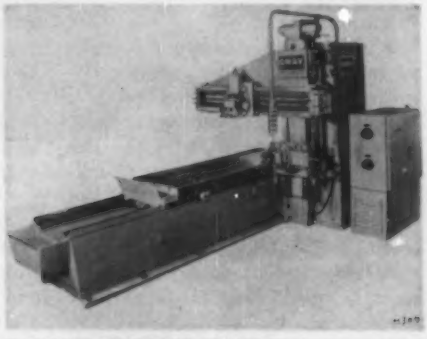
TURRET LATHE, tape controlled, is quickly changed from a bar machine to chucker. *Jones & Lamson Machine Co.*

PRECISION BORER claims accuracy that is as close as 20 millionths on hole roundness. *Pope Machinery Corp.*



MILLER, 3-axis numerical, selects its own tools, has speed range from 0 to 4000 rpm. *Kearney & Trecker Corp.*

JIG BORER positions within 5 microns. *Atlantic Mach. Tool.*



DOUBLE-CUTTING PLANER is low cost, does fast carbide cutting. *G. A. Gray Co.*

THREAD ROLLER can adapt to high-speed output. *Reed Rolled Thread Die Co.*

HYDRAULIC PRESS BRAKE bends 2 cm x 4 m steel. *Cincinnati Shaper Co.*

BROACHER uses "building blocks" for setup changes. *Sundstrand Corp.*

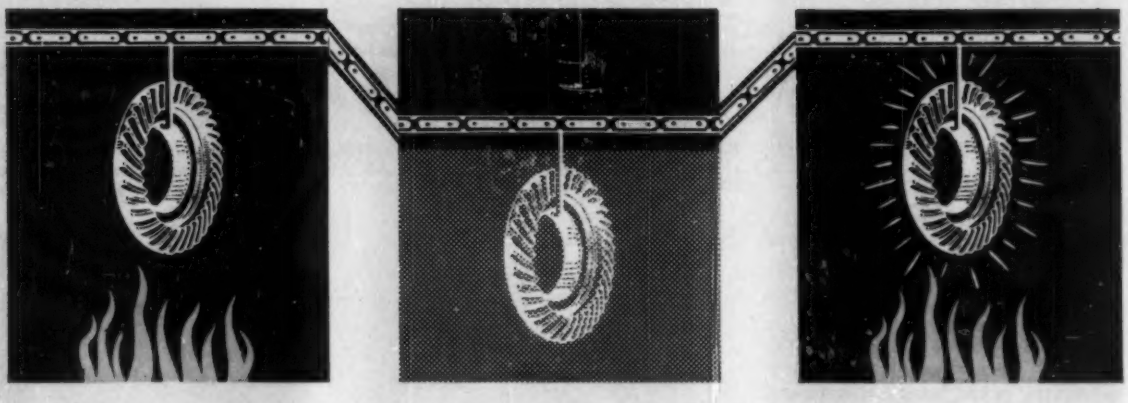
"Fluidized-bed Painting"—How it works

The Part Is...

... PREHEATED above the melting point of the resin.

... DIPPED in aerated particles that fuse to form a coating.

... POST-HEATED, if necessary, to form a smooth surface.



Americans Rush to 'Powder Painting'

A PAINTING TECHNIQUE that a few years ago was known only to a handful of experimenters is now being used on a production basis by at least 100 U. S. companies for coating everything from petroleum refinery equipment to auto and refrigerator parts.

Fluidized-bed painting — known to many as "powder painting"— grew out of German research and is making rapid headway in U. S. as well as European factories. The Americans this year will use $1-million of resins for fluidized-bed painting. One important company soon — probably this month — will complete a million-dollar automatic painting installation, the largest yet constructed.

• **What It is**—What makes fluidbed painting so attractive is its simplicity and adaptability to high-speed automation. A part passes through an oven for a few minutes and then is dipped in a bed of plastic powders "fluidized" by an ascending current of air or gas. The powders fuse on the hot object to form a thick, durable coating. In some cases, especially when using thermosetting resins, the part is post-heated to coalesce the particles into a smoother surface.

No solvents are required, there is little material loss, and there is no need for such precoating operations as deburring and buffing. Also, many plastics that cannot be applied from solution can be applied by fluidized-bed techniques.

The technique uses comparatively simple equipment: an oven or infrared lamps for heating, suitable tanks for keeping the fluidized powders suspended. Proper automatic control can give a coating of any thickness, and the color or type of plastic can be readily changed by simply attaching another container of resin to the fluidizer or its air connection.

• **Limitations** — Fluidized-bed painting has its limitations, however. It cannot be used for very thin coatings (under 125 microns), and masking sometimes is difficult. There is a danger of explosion under certain conditions; the need for high temperatures rules out some kinds of materials.

Nylon and polyethylene are the materials most commonly used by the German developer of the technique, Knapsack Griesheim AG., of Cologne. A wide range of other materials have been put to work by the U. S. licensee, Polymer Corp., and its sublicensees—including cellulosics, vinyls, epoxies, fluorocarbons, and polyethers. Other materials that can be used include polystyrenes, acrylic resins, bitumen, asbestos, metal powders, and graphite.

U. S. applications range from machinery parts to household goods. One manufacturer is coating a line of its large valves with Penton (Hercules Powder Co.'s chlorinated polyether). A construction equipment manufacturer now is putting a fluidized-bed of nylon on thrust bearings for some of its earth-movers.

• **Varied Uses** — Fluidized-bed coatings also are going on light bulbs, drum linings, plumbing fixtures, lighting panels, automobile and transformer parts. One researcher suggests that aerosol bottles could be jacketed in plastic by the fluidized-bed process.

Though experts do not expect to see coating by powders replacing conventional painting, they see it offering increasing competition—as well as cutting down the market for coating solvents. Besides the 100 U. S. companies now using the technique, another 300 are experimenting with it.

Refinements of the original process are coming out of this research. In one, the part to be coated does not have to be preheated: It can be precoated with a tacky substance, or it can be given an electrostatic charge that makes particles adhere to it. Another refinement—now being used to jacket wire—allows heating of the part while it is in the fluidized bed. (*Chemical Week, Sept* 3, *p*56)

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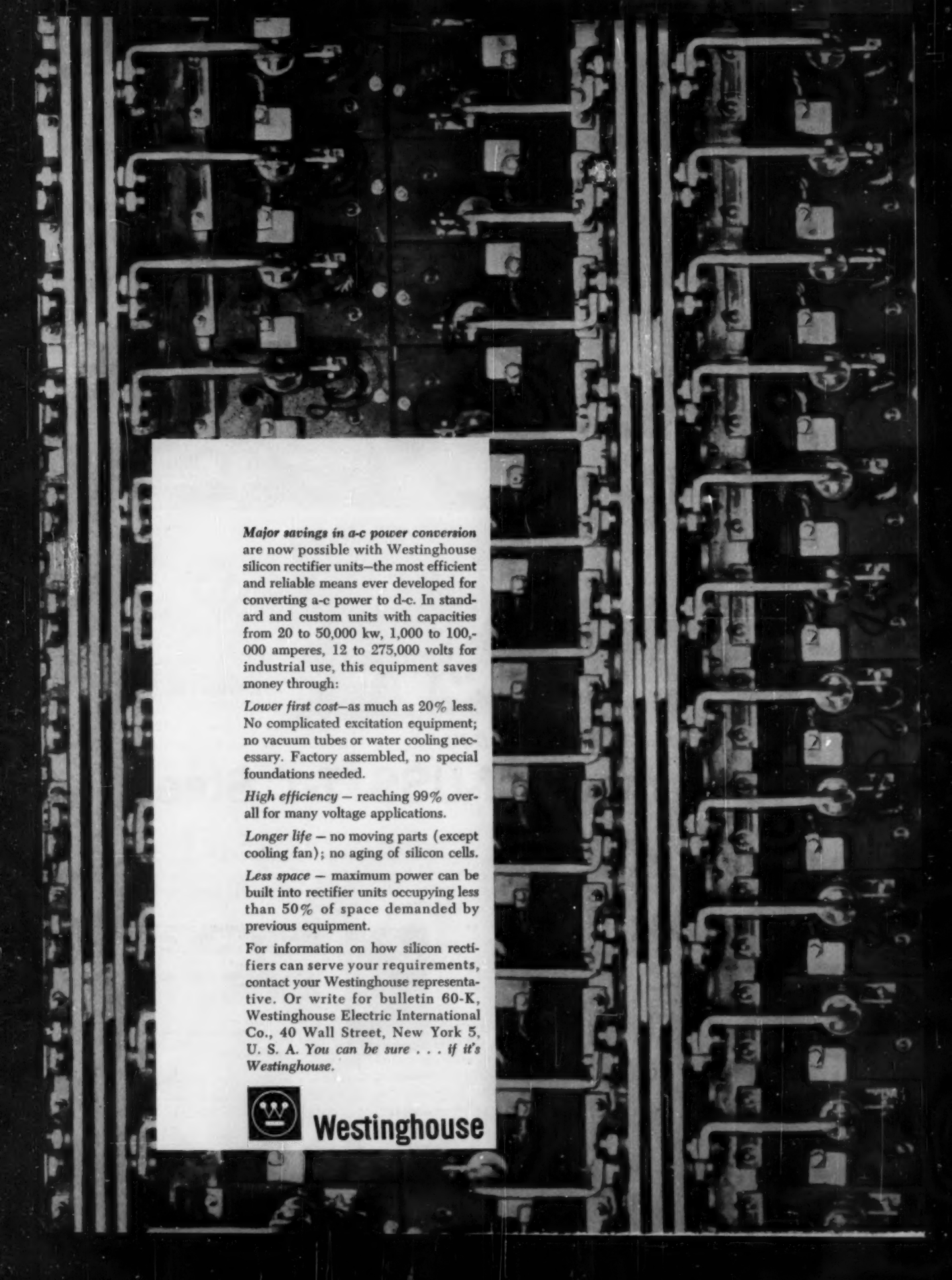

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Westinghouse

New Sintering Process Joins The Direct-Reduction Parade

DIRECT REDUCTION is surging ahead on many fronts. This is the iron-making method—over a dozen different processes, covered by an estimated 250 patents—that promises to bypass the bulky blast furnace and make cheaper iron and steel available to the small user, the isolated territory, the less-developed country.

Instead of thousands of tons of iron, small operators can make hundreds of tons. And the capital cost often is only one half or one third per ton what it would be for a blast furnace and coking plant.

Here are some late developments in direct reduction: a 150-ton-per-day HRI-process plant (IMD—Mar. '58) recently put into operation near Los Angeles, U.S.A.; a 500-ton Strategic-Udy installation (IMD—Feb. '60) soon to begin operating in Venezuela; two Mexican HyL plants now working, and a third on the way; and most recently, McDowell Co.'s demonstration of a pilot plant in Cleveland, U.S.A., that combines sintering and smelting for new economy and speed.

• **Latest Process** — McDowell's 10-ton-per-day plant employs the Dwight-Lloyd McWane (D-LM) process, the results of 12 years of research first by McWane Cast Iron Pipe Co. and then by McDowell. McWane began studies of reactions in blast furnaces back in 1948 in an effort to match the cost of large-scale production for its own lesser needs. McDowell Co. acquired rights to the process about three years ago, and now is formalizing plans for commercial plants in the U.S., the Middle East, and Japan.

The new D-LM process consumes the cheapest raw materials—non-coking coal, ore, and limestone screenings—and it uses equipment commonly employed in the iron smelting industry. The major units are a sintering machine and an electric furnace, plus optional grinding and pelletizing equipment.

Basically, the process consists of three stages: (1) the physical preparation of the ore, coal, and flux into button-size pellets; (2) partial reduction of the pellets in a sintering machine, which eliminates 50% to 70% to the oxygen; (3) smelting in an electric furnace to make a high-quality foundry iron.

What goes on in the first stage—feed preparation—depends on what raw materials are used. If the ore, coal, and flux already are fine, the material is proportioned into the system without further milling. It passes over a recording scale to a patented "flying saucer," which conglomerates the wet powder into pellets as it spins.

• **Fast Pre-Reduction** — The heart of the process is in the Dwight-Lloyd sintering machine—an improvement on the sinters that McDowell has been supplying to blast furnaces for many years. This special sinter dries, heats, calcines, and pre-reduces the pellets in about 10 minutes, compared to the four hours this job requires when feed passes down a blast furnace.

The hot (835 C) pellets from the sinter make an unusually good feed for electric furnaces, McDowell engineers report. Furnace capacity is said to be more than doubled, while power requirements are at least halved. The D-LM furnace consumes 800 to 900 kwh per ton of iron; conventional electric furnaces, charged with self-fluxing sinter and coke, require 1900 to 2500 kwh.

McDowell will be meeting stiff competition as it seeks more outlets for the D-LM process. Already moving fast is the Strategic-Udy process, which turns ore into quality iron—or even steel—by treatment in a rotary kiln and electric furnace. A 50-ton, semi-commercial S-U plant has been operating in Canada for the past three years. U.S.A.'s Koppers Co. now is completing a 500-ton S-U plant in Venezuela, and it has plans for at least two more in North America.

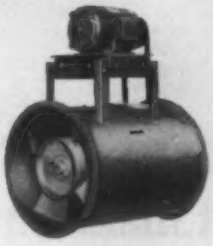
• **Other Processes** — Advances being made in direct reduction involve many countries, and numerous joint ventures. Italy's Leone Taglia Ferri is working on a process similar to the S-U with the aid of U.S.A.'s Loftus Engineering Corp. Argentina soon will get a pilot plant using an Arthur D. Little-Esso process.

Two processes that reduce ore by

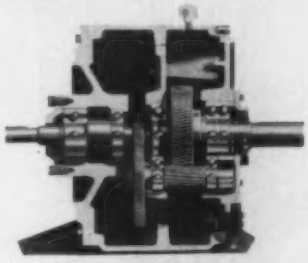
Westinghouse

RESEARCH CREATES BETTER PRODUCTS FOR THE WORLD'S INDUSTRIES

Experience and research enable Westinghouse to develop advanced equipment for almost every electrical need in any industry. For example:

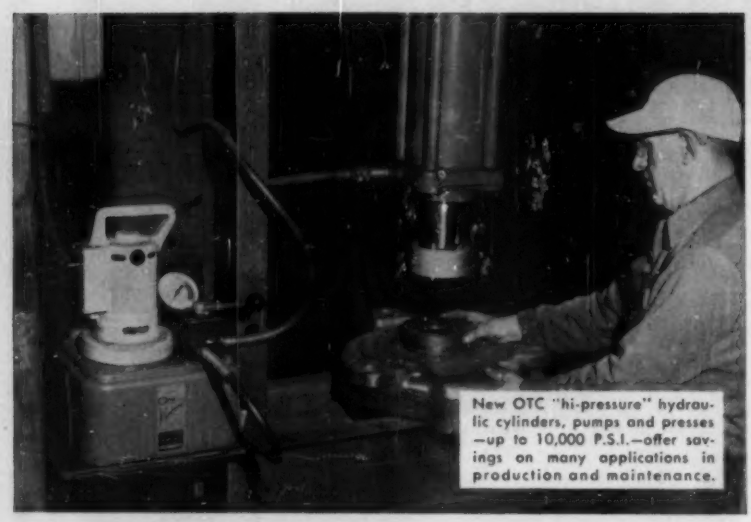


WESTINGHOUSE TUBEAXIAL FANS — for efficient handling of air, fumes, gases or vapors. Compact "in-line" design has inlet and outlet flanges for duct or stack mounting where rugged, reliable exhaust fan is needed. In three temperature classes, 165° to 600° F.



WESTINGHOUSE MODULINE GEARMOTORS — versatile line of standardized gearmotors and speed reducers, permitting over 20,000 variations in speed reduction with gear ratios from 4.17:1 to 985.3:1 — all from the same basic, readily-modified components. Special alloys assure long gear life under heavy-duty conditions.

WESTINGHOUSE PROXIMITY LIMIT SWITCHES — eliminate machine downtime for switch servicing — will actually outlast machines they control. Without tubes, moving parts, or contacts to spark, pit or wear, they resist corrosion, dust, dirt, oil mist, shock, vibration. In two sizes of sensing heads for tripping distances within ½ inch or 2 inches.


New OTC "hi-pressure" hydraulic cylinders, pumps and presses —up to 10,000 P.S.I.—offer savings on many applications in production and maintenance.

Cut maintenance and production costs with OTC hydraulic tools

NEW HYDRAULIC TOOLS SAVE PARTS, SAVE TIME, SAVE MONEY

OTC engineers have applied new developments in the field of "hi-pressure" hydraulics to the problems of modern maintenance and production. The result is a large and expanding line of efficient, high-quality OTC hydraulic equipment — cylinders, pumps, presses and attachments—that cuts machine "downtime" and maintenance costs.

HYDRAULIC TOOLS GET JOBS DONE QUICKLY AND EASILY

1. One man removes and installs railway car axle roller bearings in minutes with new, portable OTC hydraulic unit. No need to remove wheels — does not destroy wheel fit. Compact and lightweight. Handles freight cars, passenger cars and locomotives. Approved by Timken and Hyatt.

2. New 30-ton hydraulic press quickly removes and installs "equalizing beam" center and end bushings on Hendrickson Tandems (used on all leading makes of heavy duty trucks) without cutting or damage to parts.

3. Tracks from crawler tractors are quickly overhauled by OTC's "Trackmaster" hydraulic track pin press. One man removes and installs pins and bushings safely and easily. Adapters for all makes and models of tracks.

For further information contact your OTC distributor, or write:

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OWATONNA, MINNESOTA, U.S.A. CABLE ADDRESS: TOOLCO

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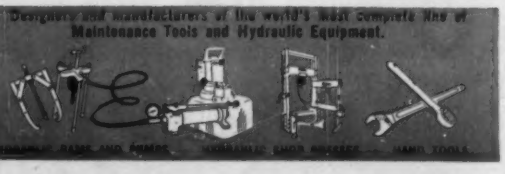


treating it with hydrogen-rich gas also are making commercial headway. Hydrocarbon Research Inc. now has two plants in the U.S. using its HRI process, including the recently completed 150-ton plant in California.

Larger plants using the similar HyL process have been built by U.S.A.'s M. W. Kellogg Co. for Mexican steelmakers Hojalata y Lamina S.A., developers of the process. A 200-ton plant went into operation three years ago, a 500-ton plant a few weeks ago, and a third 800-ton plant now is planned. The plants use natural gas to turn Mexican ore into sponge iron, which in turn is smelted into steel products. ●

Needle Workers Try Automation

A PRODUCTIVITY LESSON for small manufacturers is coming from a loft in New York's bustling ladies' garment district. An unusual pilot plant has been set up here—to refuse the widely-held belief that a small, competitive business is normally overloaded with waste, duplicated efforts, old-fashioned methods.

New York's manufacturers of skirts and sportswear—sponsors of the experimental plant—know that their industry has been guilty of all these faults. The excuse is that theirs is an erratic, highly-competitive race where copying, quick runs, fast sales, are more important than improved production methods.

But many of them who visited the pilot plant recently are aware that it does not have to be that way —that a touch of automation can work hand in hand with profit-making.

• **No Revolution**—The methods being used at the pilot plant would not look revolutionary to most manufacturers. They consist largely of using little devices that speed product flow—putting the skill in machine attachments, rather than relying on extra manpower. Here are some of the devices:

—When a sewing machine stitches a seam, an attachment now opens it and irons it flat—eliminating a "seam-busting" step.

—One girl operates two related

machines: She starts an automatic buttonholer, then sews on a button while it works.

—Automatic thread cutters snip threads hanging out of seams, and no floor girl has to go around cutting them off.

Special equipment has added only 25% to costs, while greatly speeding production and cutting labor costs. (*Business Week, Sept.* 24, *p* 74)

Ions May Be Cause Of Metallic Rust

SCIENTISTS are coming to grips with a problem that each year costs industry untold sums of money in waste. The culprit: iron rust.

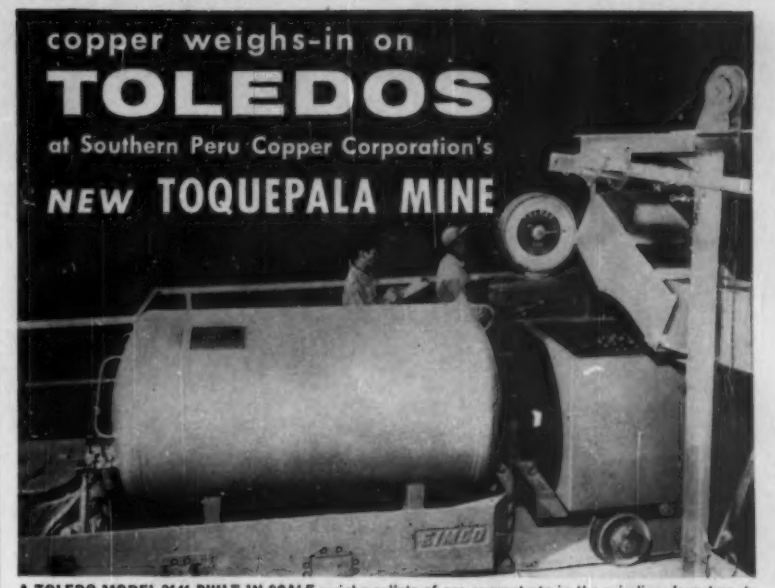
A theory recently advanced by researchers at the U.S.A.'s Westinghouse Electric Corp. blames rust on hydrogen ions. Ions are said to penetrate the metal and enlarge the sites at which oxygen normally combines with iron. The chemical reaction spreads throughout the surface of the metal.

• **Old Theory**—Previously, rusting was believed to be caused by an electrochemical reaction. Tiny local areas on the surface of the metal were assumed to act as plus and minus terminals, generating minute electric currents.

Westinghouse experiments have eliminated the conditions required for electrochemical reactions, *Product Engineering* reports. Pure iron wires as fine as sewing thread were reacted first with dry oxygen, then with oxygen and water vapor, at high temperatures and under closely-controlled, idealized conditions. The results were studied under an electron microscope.

With dry oxygen, the iron formed a protective coating of millions of tiny oxide whiskers; rust, as such, was at a minimum. Moisture changed the pattern of this growth. From the growth sites came pointed platelets of iron oxide that occupied 50 times the area of the dry-oxygen whiskers and represented 250 times more rust.

Two control methods are suggested by the Westinghouse experiments: (1) hydrogen must be prevented from entering the metal; (2) the growth of hydrogen reaction sites should be inhibited by adding alloys to the iron. ●



A TOLEDO MODEL 2141 BUILT-IN SCALE weighs pellets of ore concentrate in the grinding department.

SMELTER OPERATIONS, Toquepala Mine in Peru

TOLEDO AUTOMATIC LABORATORY SCALES assay ore samples at the smelter.

Jobs like heavy-duty weighing of ore concentrates and assaying ore samples demand high precision and dependability, at the new Toquepala Mine high in the Peruvian Andes. That's why Southern Peru Copper Corporation put Toledos on the job at Toquepala—one of the largest mining projects of the decade.

In Toquepala's operations, as in modern mining, manufacturing and other business operations world-wide, Toledos guard against losses, protect profits, preserve good-will with dependable weighing performance. In Toledo's complete line, you'll find the right answer to your weighing problems — including Toledos that *print* complete weight records automatically. Write today for new Condensed Catalog 2001. TOLEDO SCALE, Division of Toledo Scale Corporation, Toledo 12, Ohio.

SERVICE Factory-Trained 240 Cities

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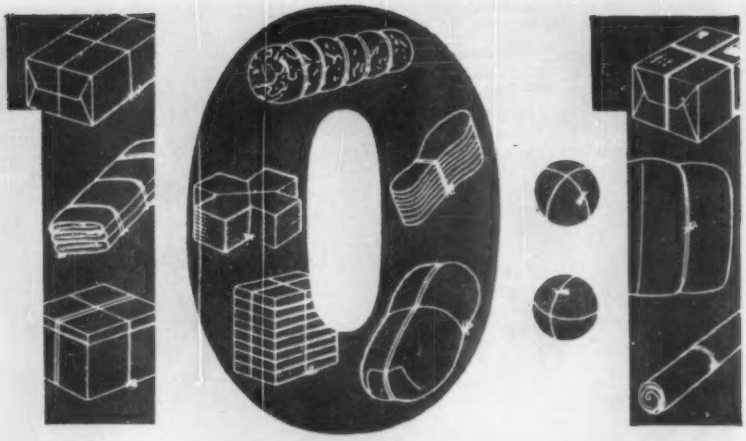

machine tying
beats hand tying 10 to 1

If you are now hand tying packages, cartons, bundles, parts, printed matter, mail . . . anything . . . then major savings can be yours by using a Bunn Package Tying Machine. It ties anything that can be tied by hand . . . up to ten times faster.

Adjusts automatically: The Bunn machine adjusts automatically to mixed packages of all sizes or shapes. It always uses exactly the right amount of twine, ties a tight, foolproof bow knot and cuts the twine close for maximum economy.

Operation is simple: Just place the package on the tying table and step on the trip. The machine does the rest . . . in 1½ seconds or less.

A model for every use: Bunn has many models to meet the special requirements of those with unusual tying problems . . . extra large boxes, long narrow bundles, over-size flats, cylindrical shapes, and others.

Bunn machine automatically tying a double wrap on a large carton with a neat, slip-proof knot.

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Please send free booklet which illustrates how we may cut costs with Bunn automatic tying.

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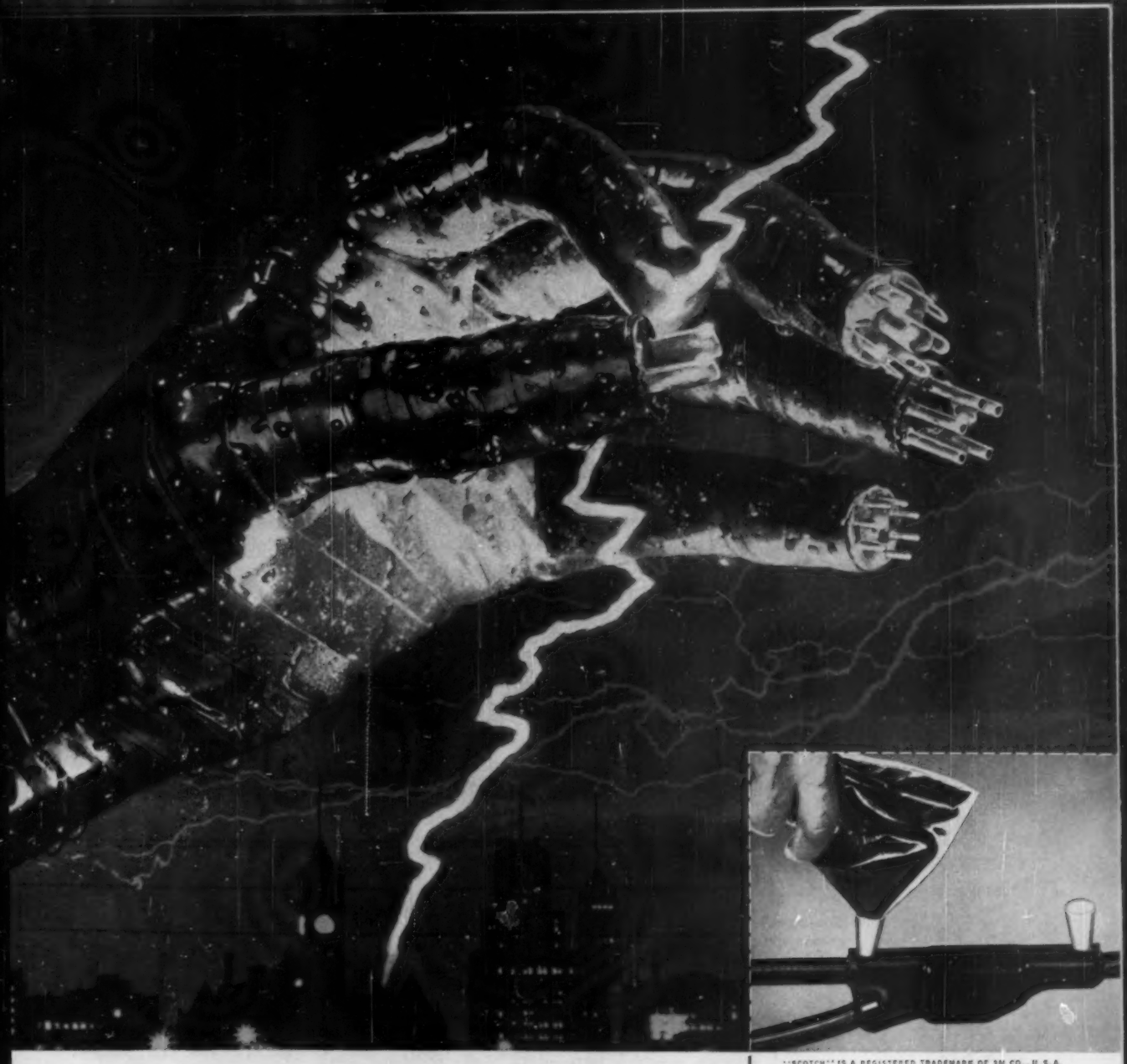
Technology in Brief

Better Metal Strip: A machine that makes it possible to slit rolled metal strip in rotary shearing machines without bowing strip edges has been developed by the British Non-Ferrous Metals Assn. Continuous tension is applied to the strip by passing it over a series of small staggered rolls. This equalizes the locked-in stresses and prevents buckling when the strip is cut. (*Product Engineering, Sept* 26, *p*6)

New Plastic Process: A small pilot plant of Japan's Tokuyama Soda Co. recently has begun making polypropylene by a new "spark discharge" process. An electric spark acts as an initiator for a special metallic halide catalyst that polymerizes the gaseous propylene and propane. The company plans to build a 10,000-ton-per-year plant early next year. (*Chemical Week, Sept* 10, *p*90)

Greaseless Autos: The day of the greaseless automobile came closer with the showing of Detroit's 1961 models. General Motors' luxurious Cadillac, for example, will be able to travel 48,000 kilometers without lubrication; all bearing surfaces, as well as suspension and steering joints, are sealed at the factory with specially-prepared greases. Ford's Fairlane, Mercury, and Lincoln-Continental models have similar systems, using a grease with a molybdenum sulfide base that is locked in with rubber and plastic seals. Several other U. S. 1961 cars feature some lubrication-free connections. Buick has four conventional lubrication points, but the rest are sealed for life. (*Petroleum Week, Sept* 9, *p* 44)

Rubber Magnets: A new family of flexible magnetic materials is being introduced by Britain's Swift Levick & Sons. Magnetic powders are incorporated into strips and extrusions of neoprene, polyvinyl chloride, and other elastomers. These materials are magnetized so they have magnetic poles in the form of stripes or bands. One novel use: the sidewall of a bicycle tire, so that a cyclist can generate power for his own lamps as the



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Look first to 3M . . . nowhere in the world can you find more concentrated knowledge of electrical products. 3M's extensive organization of electrical engineers and unequaled laboratory facilities are at your service to show you where "SCOTCH" BRAND Electrical Products can improve your products and increase your profits.

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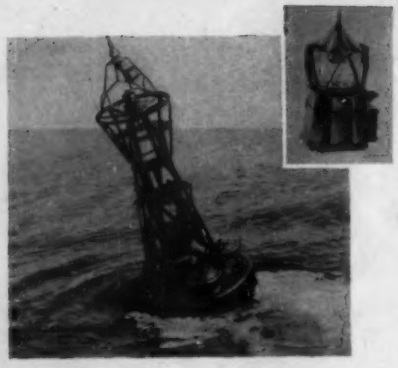
For information about 3M products write: 3M Company, International Division, St. Paul 6, Minn., U.S.A.

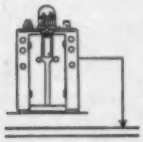


Where Performance Counts

WALLACE & TIERNAN EQUIPMENT IS USED

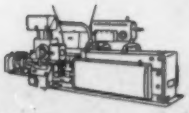
AIDS TO NAVIGATION

A W&T Buoy equipped with an electrically powered beacon, automatic lamp changer, flasher unit, and radio control equipment is shown above in service at a harbor entrance. Wallace & Tiernan equipment was chosen because of its dependability and economical operation. These qualities are typical of all W&T's navigational aids which include such items as lamp changers, flasher mechanisms, signal timers, fog horns, aircraft flasher units, and other related apparatus.



CHLORINATION

Equipment includes chlorinators of both the water and mechanical diaphragm types in all capacities, hypochlorinators, and many other auxiliary and accessory items designed for use in the treatment of water for sanitation as well as for numerous industrial purposes.



PROCESS FLOW CONTROL

Equipment includes chemical solution feeders, gravimetric and volumetric dry feeders, and gravimetric meters for use in the chemical, grain, and food processing industries.

PRESSURE SENSITIVE INSTRUMENTS

Equipment includes a complete line of aneroid and mercurial pressure sensitive instruments, such as altimeters, barometers, and manometers designed for use in industrial testing as well as for research purposes.

Other quality Wallace & Tiernan products and services used throughout the world are listed below. For further information send for list number F-105 of available free technical publications on all Wallace & Tiernan products.

Ammonia Control Apparatus — Cathodic Protection Systems — Chemical Feeders — Chlorinators — Decay Control Process for Produce — Electric Marine Beacons — Flour Processing Chemicals — Pharmaceuticals — Precision Instruments

WALLACE & TIERNAN INCORPORATED

25 MAIN STREET. BELLEVILLE 9. NEW JERSEY U.S.A.

REPRESENTED IN MOST COUNTRIES

F-105

wheel turns. (*Product Engineering, Sept* 19, *p*8)

Translating Machines: A 600,000-word "dictionary," largest of its kind, for use in electronic translation of Russian technical literature, has been developed at the University of California. Called Rusdic, the mechanical dictionary is used in conjunction with an IBM 704 digital computer, which translates about 125 words per second. Another Russian-English translating machine uses a glass disc coated with high-resolution photographic emulsion to store a 55,000-word vocabulary. The disc is scanned electronically until the machine matches a Russian word to its English equivalent, which is printed out automatically. The University of California program will be expanded to include Chinese translation. (*Chemical Week, Oct* 1, *p*55)

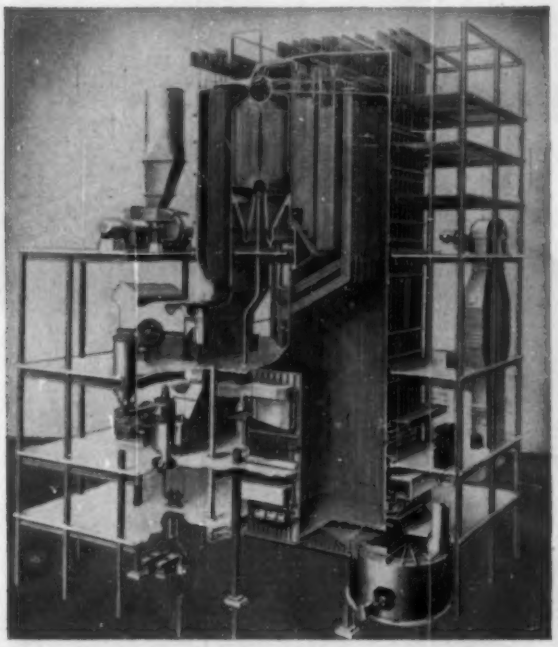
Direct Energy: Researchers have moved one step closer to practical conversion of energy directly into electricity. The U.S.A.'s General Dynamics Corp. announces it has run a cesium-cell thermionic converter at a power level of 90 watts. This is about ten times the power output of any previously described thermionic device. The cesium cell is based on the Edison effect: Electrons boil out of a hot plate and collect on an adjacent cold plate. The company says the efficiency of the cesium cell can be further increased when its dimensions are optimized. (*Chemical Engineering, Oct* 3, *p*50)

Remote Engineering: Personnel at a General Electric plant in Virginia, U.S.A., get immediate access to blueprints without leaving their work benches, through a closed-circuit television and intercom system. A camera, trained on a display board in the blueprint room, is connected to several TV monitors in the drafting-engineering, assembly planning, and assembly areas. Each monitor is equipped with "pan," tilt, and "zoom" lens control, so that an engineer can get a close-up view of a tracing by adjusting the controls. The two-way intercom system allows him to consult with blueprint staff on any questions regarding a sketch. (*Factory, Sept p*181)

How C-E Serves Pulp and Paper Makers throughout the World

Reclaiming the chemicals used in cooking pulp is a basic part of the paper industry. Originally difficult and hazardous, the job is now done safely and efficiently in C-E Chemical Recovery Units.

The C-E system takes the chemical-containing "black-liquor" residue from pulp making, burns the organic materials in the liquor and salvages the valuable inorganic chemicals—in one continuous operation. Steam produced during the recovery process frequently meets more than half of a pulp mill's requirements.



Cutaway illustration of one of the latest C-E Chemical Recovery Units. Units range in capacity from 50 to 650 tons. Unique C-E design features include self-cleaning tube "panels," "tangential" air introduction for rapid and complete combustion, a maintenance-free "decanting" hearth and precision control of liquor density through "cascade" evaporators.

C-E recovery boilers installed or on order in Asia, Europe, Latin America and North America have a combined capacity for extracting 45,000,000 pounds of chemicals every 24 hours. The value of the chemicals recovered repays the cost of the average unit in a few years.

For the additional steam needed by the pulp mill, C-E has developed a line of boilers that utilize "waste" fuels—such as bark, waste wood and sugar cane bagasse. These can be burned separately and in combination with coal, gas and oil.

Worldwide Service

Whatever your chemical recovery or steam generating needs, and wherever your plants are located, you will find C-E engineering services available. Recently, for example, C-E has developed an economical recovery unit for a bamboo pulp mill in Bataan . . . has another in a Latin American mill that makes pulp from bagasse . . . produces compact "packaged" power boilers designed for easy installation, operation and maintenance in remote areas.

You are invited to call on C-E. Address inquiries to the C-E representative nearest you, or write to the Export Department in New York.

associates, licensees and representatives throughout the free world

COMBUSTION ENGINEERING

C-E

C-268

Combustion Engineering Building
200 Madison Avenue, New York 16, N. Y.

ALL TYPES OF STEAM GENERATING, FUEL BURNING AND RELATED EQUIPMENT; NUCLEAR REACTORS; PAPER MILL EQUIPMENT; PULVERIZERS; FLASH DRYING SYSTEMS; PRESSURE VESSELS; SOIL PIPE

more jet flights between Germany and North America

More than any other airline, Lufthansa 707 jets fly daily nonstop Frankfurt to New York; twice weekly Frankfurt, Paris to Chicago or San Francisco; twice weekly Frankfurt to Montreal. Choice of First Class with Senator Service or thrifty Economy Class.

Save up to $136 on 17-Day Excursion Fare—even more on Family Fares—until March 31st.

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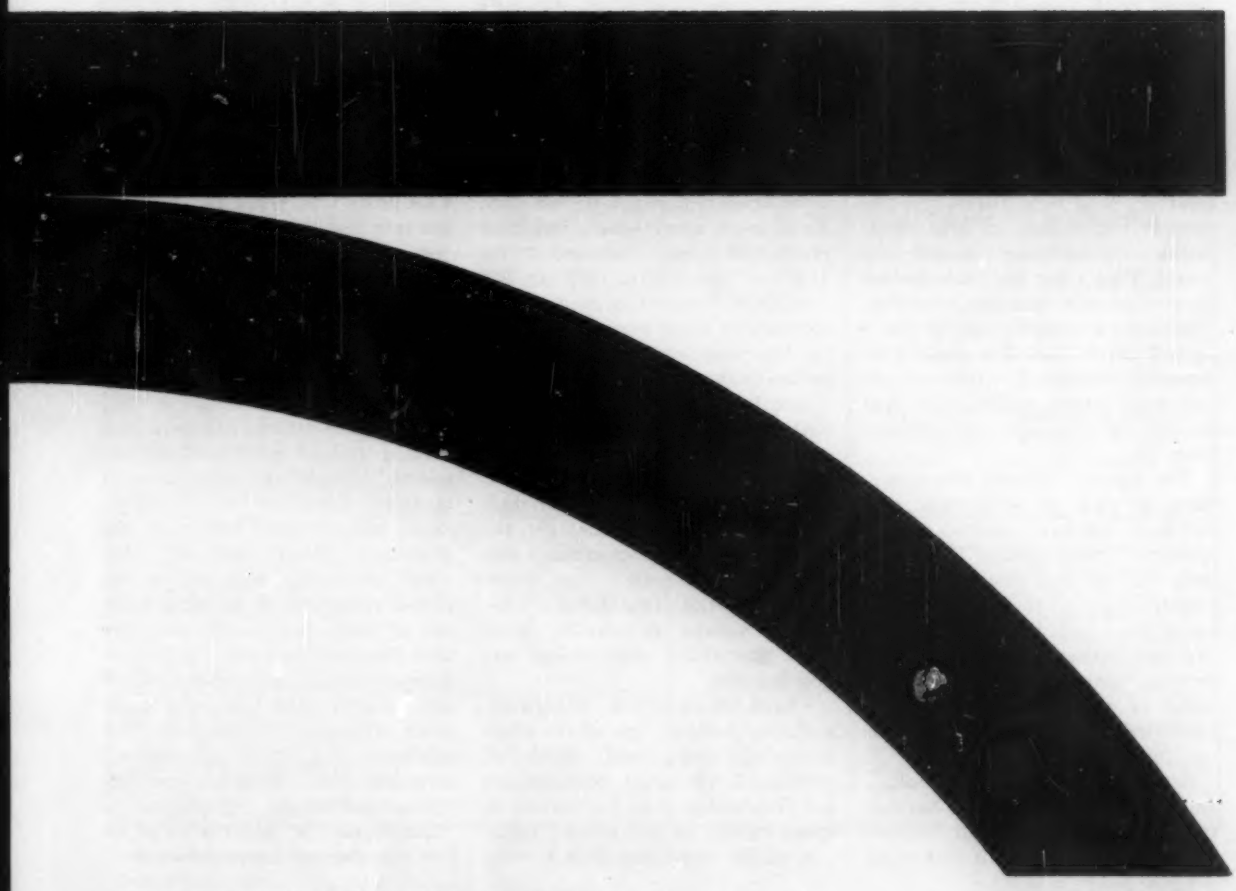
Lufthansa's exclusive Senator Service in First Class now available on these Intercontinental flights: Between Europe and North America; Europe and South America; Europe and the Far East.

More delightful than ever before! Senator Service features extra cabin staff, cocktails, canapés, caviar, vintage wines and champagnes; finest liquors; superb à la carte meals. Ask your travel agent or see Lufthansa offices in principal cities of the world.

LUFTHANSA
GERMAN AIRLINES



A report on how much advertising is done and where (right), compiled by the International Advertising Assn., shows that advertising is strong and growing. Better statistics are still needed to show off . . .

Advertising's State of Health

ADVERTISING is only a small part of marketing. But managers who believe in advertising tend to understand the entire marketing process: As advertising grows, so grows the marketing concept.

And advertising has grown rapidly in recent years. There are now half a dozen countries that spend over 2% of national income on advertising. Advertising is taking on even greater importance as "non-essential" goods become a greater factor in the world's economy.

While the techniques of advertising are still controversial, advertising itself is now accepted by many economists as a basic economic force. Not even the Communists have been able to come up with a better way to expand the consumption of consumer goods—and in fact are going into advertising.

• **Data on Advertising** — For some years, the International Advertising Association (IAA headquarters is in New York City) has been trying to keep up with advertising expenditures around the world. This year, the IAA decided to weed out its unreliable statistics. Through its membership, the Association sought data that would meet research standards. Out of 41 countries where information was sought, reliable data was received from 19.

The figures indicate the acceptance, or lack of acceptance, that media groups have attained in each country. Surprisingly, accurate data was not available—or even in preparation—in several industrial countries, including Switzerland and the Netherlands. Equally surprising, usable statistics were located in a number of developing countries: Iran, Turkey, and Curacao, for instance.

Some of the statistics are old—only 1953 figures could be verified for Sweden, Denmark, and Finland. In some places, the IAA was hampered by differences in data collection. In France, a detailed 1959 breakdown by percentages was available for major products, but the breakdown by media shows a two-year lag. In Germany, accurate statistics on expenditures were available only for radio (DM 52.3-million), television (DM 56.8-million), and press (DM 1,718.9-million).

• **Trends in Media Use** — Next year, the Association hopes to include a breakdown of media expenditures by industry (breakdowns for a few nations are included this year). These statistics will show an advertiser how his industry, on the average, is allocating its advertising budget. He does not have to follow the pattern, of course. But he will have reason to justify what pattern he follows.

Statistics for the U.S.A. show that printed advertising media made their first increase last year since television swept the country. Total press advertising (including production costs) accounted for 44.9% of the total in 1959, up .9% over 1958. Advertising men say the recovery of print media is continuing this year and radio is also expected to show a gain.

One U. S. trend is not shown by media totals. Some analysts say the mass media—both television and consumer magazines—may be getting too big and expensive for their own good. The bigger they get, the fewer the potential advertisers who want to reach such a vast, unselected audience. This gives a relative advantage to smaller, more more specialized publications and broadcasters.

• **Need for Research**—Where advertising budgets are small, selectivity of media and efforts is critical. Even small businessmen are discovering it is worthwhile to spend money to get needed facts.

A media researcher tells a story that illustrates this point. A European consumer-goods maker was putting practically all of his advertising budget into point-of-purchase posters and other "in-store" displays. Part of his confidence in this medium was based on reports from his salesmen that 75% of their customers were cooperating with the promotional program. Then the media researcher sold the manufacturer on a store audit—to tell him what percentage of his customers actually used his promotional material. The figure turned out to be 28% to 30%. The manufacturer still believes in in-store promotional aids, and he has embarked on an improvement program in this media. But realizing that other advertising media are also important, he has realigned his budget to gain balance.

• **Universal Language** — Marketing techniques are becoming universal. The annual meetings of the IAA prove this. When the delegates get into heated arguments, the subject is likely to be the agencies' split commission system rather than the function of advertising. Everybody knows that advertising can be used for a wide variety of tasks—it can supply information, educate, make people aware of their needs, create desires, and even do a certain amount of "old-fashioned selling." There are differences of opinions about tactics, of course. Some practitioners hold that the American "hard sell"—a "Buy Now" or boastful approach—is not suited elsewhere. A growing number of American practitioners believe that the "hard sell" in its more drastic forms is not suited to their own country: and they say it has never succeeded in selling industrial products. But there is growing evidence that honest, creative, straight - forward advertising — "American-style" advertising at its best—is successful everywhere.●

Country	Advtg. Volume 1959 *(U.S. dollars)	% of National Income	Major Media 1959 (% of Total Expenditure)
Argentina	$57,130,000	Not Available	Newspapers, 34%; all magazines, 11.2; outdoor & transportation, 9.6; cinema, 3.2; radio, 20.6; television, 10.7; miscellaneous 10.7
Australia	$254,220,000	2.3%	Newspapers, 40.2%; consumer magazines, 5.7; trade magazines, 1.7; outdoor & transp., 7.9; cinema, 3.5; radio, 7.9; TV, 8.8; direct, 1.3; display, 8.8; promotional schemes, 7
Belgium	$68,253,000	0.75%	Newspapers, 34.4%; all magazines, 17.2; outdoor & transp., 4.7; cinema, 6.2; radio, 1.6; direct, 18.8; exhibitions, 6.2; display, 6.2; misc., 4.7
Brazil	$110,897,000	1.4%	Newspapers, 38%; all magazines, 12; outdoor & transp., 8; radio, 16; TV, 6; direct, 18; prom. schemes, 2
Canada	$610,515,000	2.25%	Newspapers, 33.1%; consumer magazines, 3.6; trade magazines, 5.7; outdoor & transp., 3.8; radio, 12.5; TV, 13.2; direct, 18.7; reference publications, 3.7; misc., 5.7
France	$306,120,000	0.77%	†Press, 52.3%; outdoor & transp., 6.8; cinema, 4.8; radio, 5.2; direct, 12.4; display, 11.3; misc., 7.2
Japan	$376,300,000	1.5% (est.)	Newspapers, 43.3%; all magazines, 5.6; outdoor & transp., 11; cinema, 1.8; radio, 11.3; TV, 16.5; direct, 6.5; display, 2; misc., 2
Norway	$50,700,000	Not Available	Press, 53.4%; outdoor & transp., 4.2; cinema, 2.8; direct, 11; exhibitions, 1.4; ref. publications, 5; misc., 9.7
United Kingdom	$1,113,900,000	2.1%	Newspapers, 28%; consumer magazines, 8.5; trade magazines, 7; outdoor & transp., 6.5; cinema, 1; TV, 15; direct, 9.5; exhibitions, 3; display, 6; prom. schemes, 4; misc., 1.5
United States	$11,090,000,000	2.79%	Newspapers, 29.7%; consumer magazines, 6.7; trade magazines, 5.1; outdoor, 1.8; radio, 5.8; TV, 13.7; direct, 14.2; misc., 19.6

*New York exchange rates, Sept. 1, 1960

†Breakdown for 1957

"Triple-Play" in Tool Markets

An American firm joins with Japanese and Italians to sell more machine tools.

IN AMERICAN BASEBALL, there is a maneuver known as a "triple-play". And it has found a firm place in colloquial American usage through the last names of its greatest practitioners, Messrs. Tinker, Evers, and Chance.

So it is with a leading machine tool builder's international marketing plan. At the September machine tool exposition in Chicago (see "Technology"), Pratt & Whitney Co., of West Hartford, Connecticut. U.S.A., announced a Tinker-to-Evers-to-Chance arrangement linking three companies, in three nations, on three continents. Here is how it works:

Pratt & Whitney arranged to distribute in the U.S.A. a line of machines, some of which are made in Italy, others in Japan, as additions to its own output. Involved are Mitsubishi Shipbuilding & Engineering Co. of Tokyo and Innocenti S. G., Milan.

• **Big and Small**—Pratt & Whitney will handle the smaller models of the milling, boring, and combined machines manufactured by Mitsubishi in Japan under license from Innocenti. It will sell, direct from Italy, larger boring mills made by Innocenti itself.

Jacob J. Jaeger, President of Pratt & Whitney, explains his three-way gambit this way:

"To expand our markets we must recognize the international character of manufacturing and distribution. For a very complicated set of reasons, American manufacturers —who must seek business in the mass consumer markets of the world—are allowing their plants rapidly to become obsolete. They need modern machines to overcome the cost-price squeeze which is both reducing their profits and opening the door to foreign competition."

• **Tariffs?** — Jaeger adds that some Americans want higher tariffs or quotas on tools—and declares that is "exactly what is not needed by the American machine tool builder." He points out that about 50% of the production of some U. S. tool builders is for export, and that the industry would suffer from severe retaliation abroad if it restricted imports at home. The cure, says Jaeger, is in the "installation of better tools and production machinery that will enable our manufacturers to reduce costs—whether the machines are made in the U.S.A. or abroad."

Meanwhile, Pratt & Whitney is moving further into the stream of international marketing — as a manufacturer, as an exporter and importer, as a distributor. In addition to its arrangements in Japan and Italy, Pratt & Whitney has licensed one of its machines for manufacture and sale in Britain under a joint venture agreement, and is importing one of its own designs now being manufactured by an affiliate in France. ●

AIR-supported dome houses "Antique Americana" shopping center exhibit.

New Exhibits for the Shopper

SHOPPING CENTERS are taking on the role of fairgrounds in some parts of the United States, as exhibitions of consumer goods on the shopping malls become popular with shoppers, manufacturers, and centers alike.

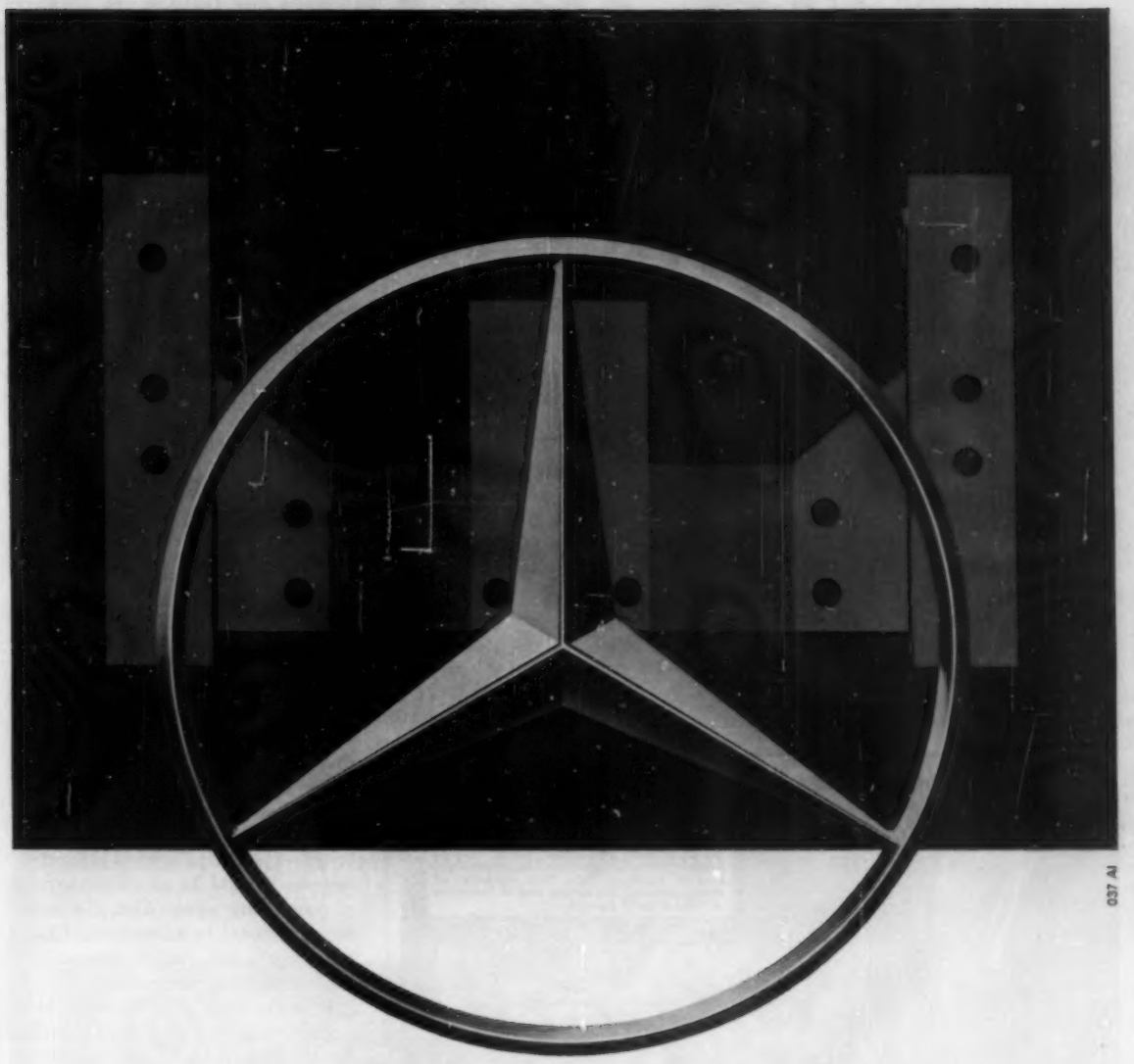
There are now about 4000 shopping centers stretched across the country, catering to a generally high-income, home-owning clientele, mainly in suburban areas. Some of these contain as many as 90 stores, including branches of well-known department stores. Shopping centers can handle more than 200,000 shoppers a week, as many as 250,000 a day during the Christmas season.

Most larger centers have approved budgets of about $100,000 for advertising and promotion, but this has to strike a happy medium for all stores.

Manufacturers are therefore eyeing the vast potential of the shopping market with interest. Chevrolet (autos), Pan American World Airways, Seagram's (liquors), among others, have been sending exhibits to selected centers, and Ford Motor Co. has become a familiar sight on shopping malls with a number of shows each year. Sometimes a number of manufacturers will cooperate in a traveling exhibit, as in the "Antique Americana" show pictured above, which was sponsored by Four Roses Distillers Company to promote its Antique Kentucky Bourbon whiskey.

For its part, the International Council of Shopping Centers is now engaged in promoting such activities through the whole range of shopping centers. Exhibitors can also count on the help of the centers themselves, who support advertising in regional media and help in other ways. (*Sales Meetings, Sept 16, p76*)

Quality - and what is behind it



037 AI

Sturdy construction

Hard work day in day out in difficult terrain - that's a job for Mercedes-Benz trucks. Indeed it is on the most difficult task that they prove their worth to the full. They carry a lot - for a lot of years, a fact which can only be of benefit to you. Sound design, precision and robust construction are Mercedes-Benz guarantees for economical operation.

MERCEDES-BENZ

Du Pont Focuses Research On Customers' Customers

SALESMEN armed with information on their customers' markets have an advantage over competitive salesmen who have only their own product stories to tell. Here is where market research becomes an important aid in direct selling.

At E. I. du Pont de Nemours & Co., the giant chemical producer, this kind of market research has earned its own name: "merchandising research." Du Pont's plastic film department has made many of these studies in recent years. Its latest report, on the market potential for frozen foods packaged in "heat-in-the-bag" pouches, was released in September.

• **Kinds of Research**—Most of Du Pont's reports emphasize "how to do it"—how retail stores can sell more frozen foods, or Christmas tree ornaments, or vegetables, bread, snack foods. According to Frederic Clark, manager of marketing research, the studies fall into two broad categories: "once-and-done" studies, made mostly in markets that are relatively unknown or unimportant; and continuing surveys that aim at identifying shifts in buying habits and consumer opinions.

The firm's oldest and most successful merchandising research project is a continuing study of supermarket shopping patterns, now covering over 20 years of change. It is accepted as a barometer of supermarket customer behavior. The sixth installment was made this year, at a cost of $50,000 (Du Pont is reluctant to discuss costs, but most surveys probably cost less than this).

The recently completed study of heat-in-the-bag packages is a good example of a one-time study. Du Pont has known for some time that these pouches offer a promising market for its polyester and polyethylene film. But no one—not even the packers, distributors, wholesalers, and retailers of frozen foods—knew how fast the new packages were taking hold, why people bought them, or what packers and distributors should do to aid the growth of this product.

• **Survey Results**—To find out where heat-in-the-bag packaging was headed, Du Pont sponsored a survey of 20,000 households across the U.S.A. Reaction to the new pouch correlates closely with frozen food purchases in general—consumers cite convenience as their major reason for buying. Some 36% of the households queried had tried heat-in-the-bag products, and over half of these had made repeat purchases. Nearly 70% said they liked the idea of the package, whether they had tried it or not. Strongest consumption was found in areas that had received the heaviest promotional effort from packers and distributors.

According to Du Pont, the market for pouches should double every year over the next five years. To maintain this growth rate, Du Pont salesmen are busily broadcasting the survey findings. And they have some suggestions for packers and distributors of frozen foods. Since there is a strong interest in the pouch package, backed by a good record of repeat purchases, Du Pont reasons that giving away free samples should be an effective way of increasing sales. Also, the salesmen can point to markets that have been neglected, and to promotions that have been successful.

It is Du Pont's intention to keep a good share of the pouch market for its film. About 80% to 85% of all heat-in-the-bag pouches sold in the United States are now made from polyester. Other plastics—nylon, polypropylene, etc.—are expected to make a strong bid for the market. In addition to 69,000 plastic pouches used in the food field last year, another 30,000 were used to package pharmaceuticals, medicinals, nuts and bolts, tools, and other small products.

Actually, Du Pont sells most of its film to package manufacturers; these "converters" supply the packers, distributors, and retailers. So in this case, Du Pont was doing research on its customers' customers' customers. (*Chemical Week, Sept 17, p49*)

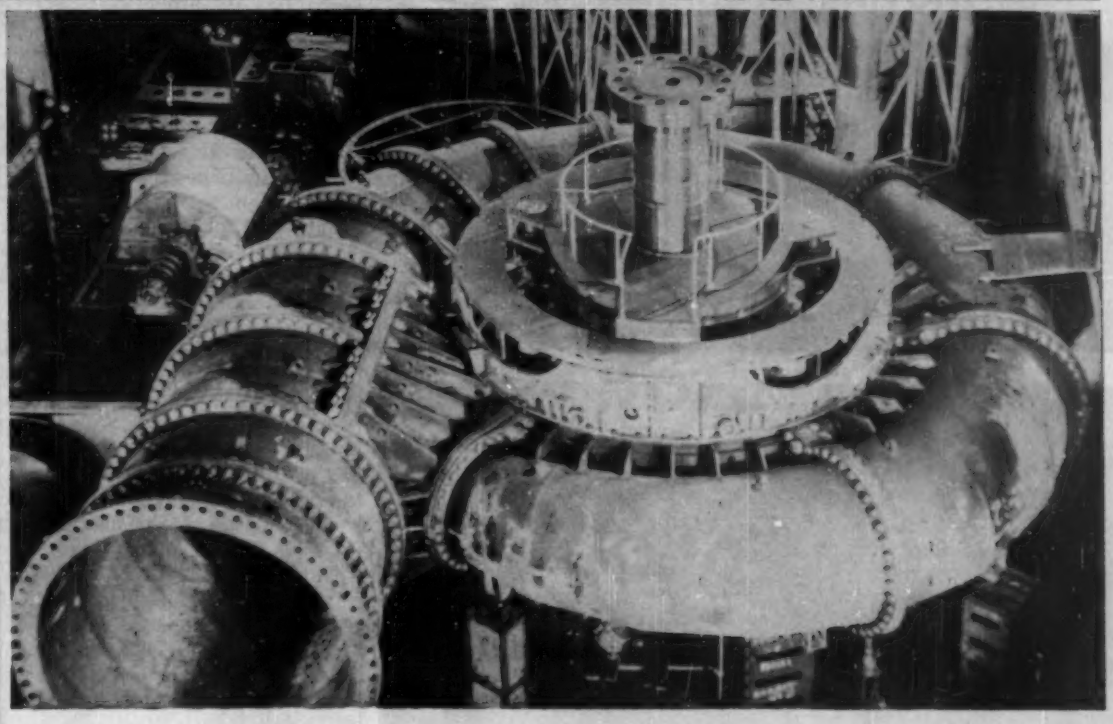
LAST 3 TIMES LONGER, PUMPING ABRASIVE LIQUIDS

Left to right are shown: R. W. Delaney, General Foreman of Maintenance of the Westinghouse Mansfield plant; C. N. Greene, Tuller Corporation, Columbus, Ohio and W. O. Hale, Paint Lab. Foreman of Westinghouse, inspecting one of two rows of Viking paint pumps.

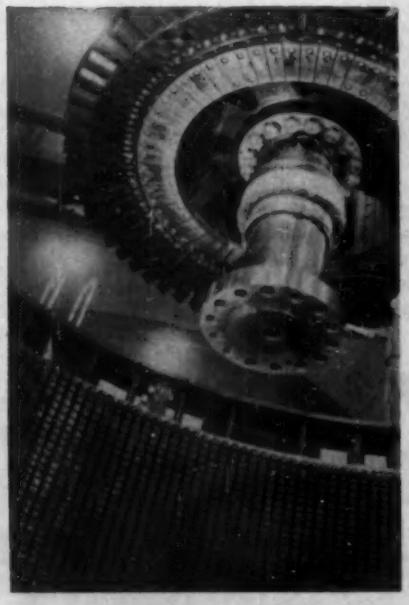
WESTINGHOUSE Electric Corporation's major appliance plant at Mansfield, Ohio has materially reduced the problem of pumping abrasive type coating materials, according to Mr. C. Reining, Manager, Works Engineering. **VIKING'S** new abrasive liquid **PUMPS** are the answer, working 24 hours a day, 7 days a week. These new pumps are lasting three times longer than any previous equipment and still going strong. Pressures range from 45 to 95 PSI. Of the 28 **VIKING PUMPS** handling paints, primers and finish coatings in the Westinghouse Mansfield plant, 12 are the latest type of **VIKING** abrasive liquid construction. The other 16 will be replaced with new type **VIKINGS.**

Have an abrasive liquid pumping problem at your plant? Profit by this Westinghouse experience! Install new **VIKING PUMPS,** with ceramic bearings and mechanical seals, especially designed to handle abrasive* liquids and provide long pump life. When writing please give this information: 1. Liquid pumped, 2. Viscosity of liquid (SSU), 3. Percentage and type of solids present in liquid, 4. Temperature of liquid, 5. Specific gravity, 6. Capacity of pump, 7. Suction lift or head, 8. Discharge pressure . . . and ask for bulletin section SP-507. **VIKING PUMP COMPANY,** Cedar Falls, Iowa, U.S.A. In Canada, it's **"ROTO-KING" PUMPS.** (*Consult factory for recommendations on pumping abrasive liquids other than paints and inks.) World Wide Sales and Service.

HITACHI



Another big Hydraulic Turbine and Generator by Hitachi



Hitachi has recently completed two 137,500kw/125,000kVA hydraulic turbines and generators for the Miboro Power Station in Central Japan. The turbine is of the vertical-shaft Francis type, and specified for a speed of 225 rpm, a maximum effective head of 200 m and 76.6 cu.m/sec water flow, making it one of the largest units of its kind in the world. Its runner has a maximum diameter of 3.7 m and the main shaft a diameter of 95 cm. The spiral casing, which was constructed in 13 sections to facilitate transportation to the site, has an inlet diameter of 3.35 m and an outer diameter of 11.2 m.

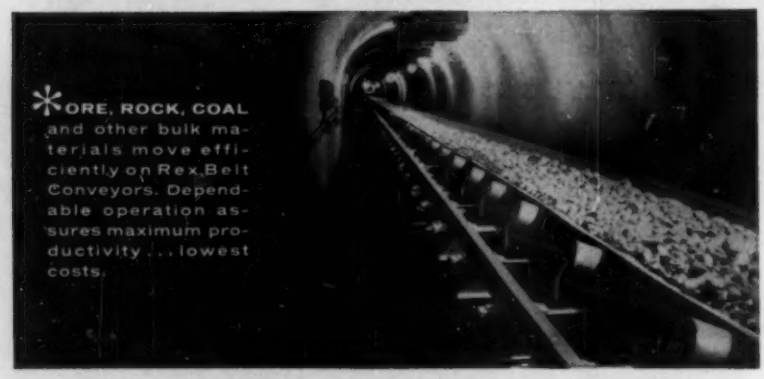
The generator presents a high-torsoed appearance as shown in the photograph, having been so designed in consideration of the comparatively high speed. Since the generator was designed for a rated voltage of 16,500 volts and, in this respect, represents the first such attempt in Japan, particular care was taken in the corona-shielding and impulse resistance of the stator winding. The generator is rated at 60 cycles, 225 rpm and 0.9 power factor but is also capable of operating at 50 cycles, 187.5 rpm and 1.0 power factor.

Hitachi, Ltd.
Tokyo Japan

Por Cable: "HITACHY" TOKYO

How to keep it * moving profitably

*BOTTLES, CANS, JARS move smoothly and economically on Rex TableTop Chains. Simple design with no gap between links prevents tipping of containers.



*ORE, ROCK, COAL and other bulk materials move efficiently on Rex Belt Conveyors. Dependable operation assures maximum productivity . . . lowest costs.

*SMALL PARTS, PACKAGES, BOXES are moved swiftly and economically on Rex Roller Chains. Precision construction assures quiet, smooth operation.

For dependable, efficient conveying and power transmission, Rex Chains, Sprockets, Roller Bearings, Belt Conveyor Idlers and Pulleys are the preferred choice the world over. In the complete CHAIN Belt line, there is a type and size that will exactly meet your requirements. They stand up under the most severe operating conditions...eliminate costly, premature failures that mean lost production time.

Your local CHAIN Belt Distributor will be happy to give you the complete story on Rex Power Transmission and Conveying Equipment...Water and Waste Treatment Equipment. CHAIN Belt also makes Rex Concrete Mixing, Hauling, Placing and Road-Building Machinery. CHAIN Belt Company, 4654 West Greenfield Ave., Milwaukee 1, Wisconsin, U.S.A.

REX®

CHAIN BELT COMPANY

EXPORT OFFICES: Milwaukee 1, Wis., and 19 Rector St., New York 6, N.Y., U.S.A. Distributors in all principal cities of the world. Cable Address: "BELTCHAIN"

In Marketing

ANIMATION PROCESS for sales displays and demonstrations makes wheels turn, lightning flash, fuels surge through engines—all from a flat projection plate. The new process involves photographing a drawing to make transparencies, then adhering patterned plastic material to simulate the action. The illusion of motion is created by rotating a Polaroid disk in front of the projector. Action can be reversed and speeds changed by adjusting the disk; action can go in several directions at the same time, at four different speeds. "Do-it-yourself" kits are available from Tech Antares Corp., Wilmington, Delaware, U.S.A.

UNABLE TO AFFORD an expensive sales meeting, a U. S. producer of pipe fittings is conducting a "national convention" by mail. From June to January, 2,000 representatives of the Hollaender Mfg. Co., Cincinnati, Ohio, are participating in "Imagination Workshop," complete with welcoming speeches, sales training lectures, awards at the end. (*Sales Meetings, Sept* 16, *p*80)

NEW PRODUCT PIONEERS are coming in for attention on both sides of the Atlantic. Recent U. S. studies have linked consumers who are first to buy a new product with "high mobility"—both in physical and social terms. Studies in The Netherlands indicate that specific product groups have their own specific pioneer users, but that these do not necessarily predict general consumption patterns. But as a general rule, Dutch pioneers of food products such as instant coffee, precooked rice, and teabags tended to be young housewives with a good income.

BEST WAY to improve the productivity of sales staffs, according to a survey of 240 U. S. companies by the National Industrial Conference Board, is through the "tried and true" fundamentals. That means such things as improving the morale of salesmen; improving sales promotion and market research that support the salesmen, and eliminating some of the salesmen's bothersome paperwork.

Housewives' choice

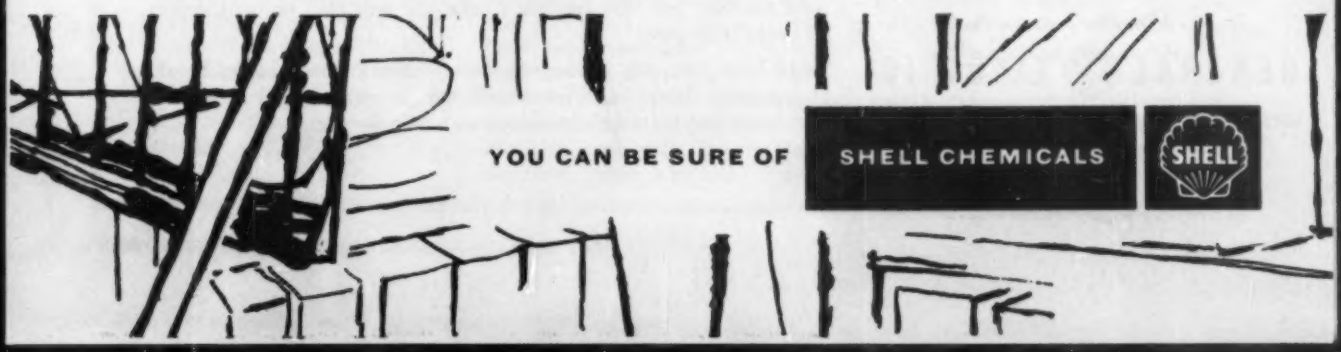
This one or that one? What a choice there is in today's supermarket. One thing she can be sure of: that every article of prepared food she buys is factory-fresh. Yet it may have been weeks on the shelf. How does it keep so well? What is the manufacturer's "secret weapon" against spoilage?

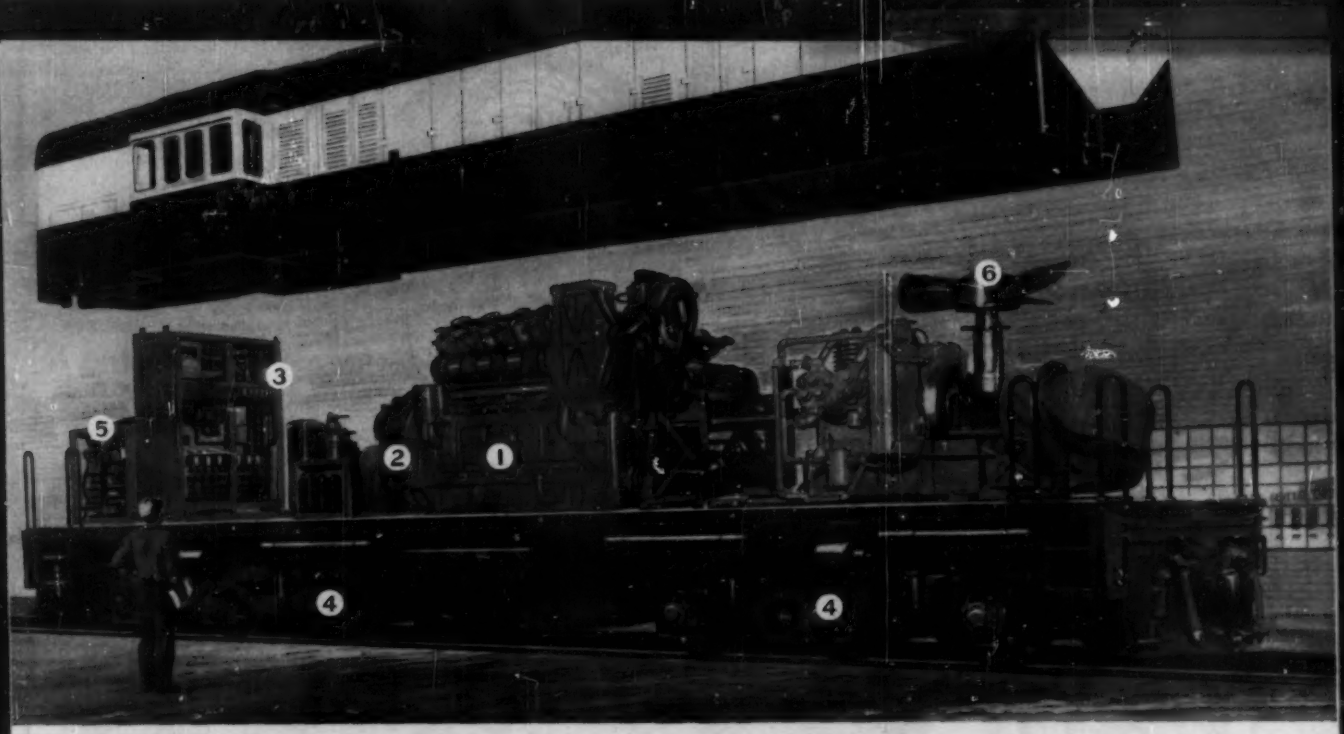
Anti-oxidants are the answer. One such is Shell's *Ionol C P*, a colourless, odourless, tasteless chemical which, added to fats and vegetable oils, considerably delays their going rancid. This activity carries over into baked foods made from the stabilised fat and so the 'life' of the product is lengthened. In addition, *Ionol C P* may also be incorporated in the wrapping paper.

In every industry everywhere, you will find Shell chemicals similarly being used. There is hardly an industrial chemical in demand today not made by Shell. And, side by side with this vast production, Shell research goes on constantly . . . to discover new syntheses, new properties, new uses. Additives, detergents, plastics, solvents, synthetic rubbers . . . all these are Shell. It is worth your while to think of Shell when you think of chemicals.

Shell Industrial Chemicals

Issued by Shell International Chemical Company Limited. For further information apply to your Shell Company.





POWERHOUSE ON WHEELS

When was the last time you stopped to count the cars of a train as it whistled past a crossing? Did you ever wonder how powerful the locomotive must be to haul such a long line of freight cars? Were you ever curious about what makes a locomotive work?

In a General Electric locomotive it begins with one of the most powerful diesel engines (1) known to the railroad industry. To it is joined a high-speed generator (2) to produce the economical electricity which is the actual driving power. By means of a simple control (3) developed by G.E. for locomotive use, the operator gently controls this giant of efficiency by regulating the amount of electricity that flows to each axle-mounted (4) motor. Modern braking equipment (5) also regulated by electricity is furnished for safe, easier train handling; and a huge fan (6) provides large amounts of cooling air for all this power-producing machinery.

These basic parts, combined with many other smaller components, are unified as shown above. Assembled with infinite skill and covered with a colorful welded-steel exterior, this giant of the rails is specifically designed to haul more goods faster . . . at less cost.

And chances are this electric workhorse will still be on the job 20 years from now!

Next time you see a modern diesel-electric locomotive, think about these things; and remember, too, how important a railway can be to the economic development of your country. 200-E3

Progress Is Our Most Important Product

GENERAL ELECTRIC

LOCOMOTIVE & CAR EQUIPMENT DEPT., ERIE, PA., U.S.A.

● PRODUCT DIGEST

New Aluminum Can—You Tear it Open

Aluminum's advantages over steel are exploited in a new can developed jointly by two U.S. companies (IMD—Oct, p 19). The can has a thin aluminum top that is easily ripped off by pulling on a tab. A finger loop is welded to the top; when this is lifted the edge strip peels off, and the top with it. Although this is not an all-metal container (the body is made of paperboard laminated inside and out with aluminum foil), the manufacturers say the tab principle can be employed just as well on all-aluminum cans or ones with tinplate bodies and aluminum tops. *Aluminum Company of America, 726 Alcoa Bldg., Pittsburgh 19, Pa., U.S.A.* and *United Shoe Machinery Corp., 140 Federal St., Boston 7, Mass., U.S.A.*

Plastics Adding Machine

Plastics figure more largely in Smith Corona's latest adding machine than in any other product of this type. Except for the operating mechanism itself, virtually all parts are of plastics. This has meant a 64% saving in overall production costs compared with the former model, as well as considerable reduction in retooling and tool-maintenance costs. Among design changes are a new handle, which is a one-piece Delrin molding, and more comfortably shaped keys. The machine comes in several colors.

The new line comprises five 10-key, machines, two of which can also subtract. *Smith Corona-Marchant Inc., 700 E. Water St., Syracuse 1, N. Y., U.S.A.*

Improved Asbestos Insulation

Silicone resin serves as a binder in a new type of asbestos insulation. Its advantages: unusual strength, no effect after exposure to heat or water. *Wacker-Chemie GmbH,, Munich, West Germany.*

In the August Product Digest, INTERNATIONAL MANAGEMENT reported that Remington Rand's Quiet-riter Eleven typewriter was being produced with a plastic housing. We have been asked to point out that this is true only of machines sold in the U. S. The machine will be marketed in other nations with an all-metal casing.

1. AUDIO-VISUAL training system.

2. PRODUCTOGRAPH system links operator (left) with supervisor (right).

Two Aids for Worker and Supervisor

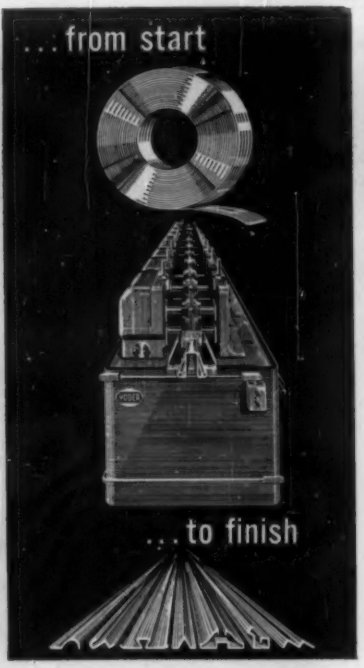
Audio-visual aids, like the **ACS System** above (1), can make complex assembly operations far simpler, as well as helping to increase production and reduce defect rate. Designed to be mounted on each work station, the unit consists of a small 35mm projector, a self-contained sound-tape speaker with attached earphones, and a built-in "background music" system. On any complex assembly operation, each step appears, in color, on the screen. At the same time, the taped program gives out synchronized instructions. Between instructions, the worker's psyche is soothed by a selected musical score. The system is said to work best in work cycles of at least 30 minutes. *Applied Communication Systems, Culver City, Calif., U.S.A.*

Compared with the complicated charts and graphs that are the usual paraphernalia of production control, the **Productograph** shown above (2) is an amazingly speedy system. Based on direct communication between machine operator and supervisor, it gives the supervisor an automatic and running record of what each machine is doing. The console units can supervise up to 200 machines (the one above is hooked up to 40 machines).

At his large console, the supervisor can tell at a glance which machines are running, which are idle, and why; how many units have been produced; how close each operator is to completion of his order; and so on. The Productograph automatically records in chart form such factors like machine operating and down times and the causes of down times—besides incidentally providing information for computing incentive pay.

Communication between operator and supervisor works two ways: When a piece of equipment shuts down, the operator is supposed to inform his supervisor immediately of the cause, using the control box at his right (picture, left). This registers on the console. If the operator doesn't push a button, the supervisor (who can see from the console that the machine is down) will check back to see what happened.

The Productograph was developed by Josef Mayr, Uttenreuth, West Germany, and is distributed by *Siemens & Halske AG., Wittelsbacherplatz 2, Munich 2, West Germany.*



YODER ROLL-FORMING EQUIPMENT

Profits are available to you through the production of many shapes in metal... made with precision and economy on Yoder Cold Roll Forming Equipment.

Produce tubular, ornamental or structural shapes from a variety of metals in widths from a fraction of an inch up to 50 inches or more, and in stock up to ¾" thick. Your investment is comparatively modest, and with proven low operating costs, will give you one of the most profitable operations in your plant.

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Pay Within the Company—U.S.A. and Europe
percentage of top manager's compensation

	U.S.A.*	U.K.	FRANCE	GERMANY	ITALY
Top Man	100	100	100	100	100
No. 2 Man	66	58	58	59	58
No. 3 Man	53	46	50	42	46
No. 4 Man	52	39	44	35	40
No. 5 Man	49	35	39	25	38

*The U.S. Chief executive earns anywhere from 33% to 100% more than his counterpart in Europe.

Executive Pay Patterns Raise Fresh Questions

ARE EUROPEAN MANAGERS "UNDERPAID"? The chart above suggests they may be. An American company recently discovered more dramatic evidence. Unable to determine a "going" rate for its European subsidiary chiefs, this company let the executives set their own salaries. The result: complaints from lower-level managers who say their salary ceilings are too low—because the top men are underpaying themselves. And the chart shows pay gaps within European companies tend to be wider than in the U.S.A.

In any country, top management's pay is a fairly delicate subject. But surveying management practices is practically a national pastime in the U.S.A., and salary surveys are no exception. (Also, companies listed on American stock exchanges must disclose the remuneration of their top men.) Now, concern with compensation seems to be spreading.

The American Management Association is planning a survey of Brazilian pay practices through its new management center in Sao Paulo; the *Frankfurter Allgemeine Zeitung* recently published an analysis of stock-exchange reports covering 1529 German managing directors; executive compensation practices in Britain are coming in for discussion and debate. The British Institute of Management (BIM) just completed its second executive compensation study, and stock option practices are getting attention in the House of Commons. The survey results here (above, and opposite) are the work of McKinsey & Co., a U.S. consulting firm that makes an annual study of compensation trends in American industry, and is now expanding its interest abroad—specifically in Europe.

The McKinsey survey is quite small by U.S. standards, including data from 34 companies almost all in Britain, France, Belgium, Germany, and Italy. But it is a helpful contribution to an area where there has been little information. J. McLain Stewart, who did the interviewing, believes the findings are generally representative of European practices and attitudes.

I. European Pattern

First of all, Stewart emphasizes, European and American executives do not live worlds apart. The same range of fringe benefits is found on both sides of the Atlantic. In Europe, however, there is a much greater emphasis on perquisites.

Such extras as car and chauffeur and housing assistance tend to go one full level further down in the organization than in America. Job security also gets more emphasis—European executives are seldom fired. (American executives, it should be noted, are fired much more often in motion pictures than in real life.)

Cash incentives are not emphasized in Europe partly because so many companies are either family-owned or tightly controlled. Probably more important, European companies have not yet given much thought to compensation as a means of attracting or retaining executives—or motivating them to do a better job.

Job evaluation programs above the worker level are unknown in Europe in all but a handful of the largest companies, and only recently have they begun to relate compensation to function and responsibility within the company or to similar jobs in other companies. Salary increases and promotions are more often than not based on seniority: In the companies Stewart surveyed, key executives with long experience tend to earn within 10% to 15% of each other, as compared to 25% to 30% in the U. S. A.

Bonuses are not common; and where they are paid, they tend to be equally distributed, or a fixed percentage of salary, rather than based on each executive's contribution or performance. Stock options are also rare. Top managers tend to be owners, and where there are professional managers, there is little concern with giving them a proprietary interest. Stewart believes that European companies could do much more in the incentive area of compensation.

Neither do Europeans change jobs very readily. "I got the impression that a social stigma is attached to changing companies," Stewart says. "Looking around for another job is interpreted by top management or family owners as almost breaking faith—and the younger man is understandably reluctant to take this risk." And there are few executive recruiting firms in Europe.

There has not been the proliferation of high-level staff jobs that is characteristic of American business, where professional specialists can transfer from company to company with little trouble. Executive skills are not widely regarded as being interchangeable between companies in Europe. McKinsey staff consultants feel these two conditions will change dramatically as European competition intensifies between industries and companies, rather than between countries.

• **Changing Times** — Indeed, changes are coming fast; traditions are beginning to give away. Industrial expansion and fast-growing markets create a shortage of executive talent. Marketing skills in particular are much in demand, and executive recruiting advertisements are increasing noticeably. Company growth is forcing greater delegation of authority; staff jobs are being created to help line managers. Inevitably, less emphasis is placed on company loyalty, more on executive performance. Stewart comments: "In a very few years, executive compensation is going to be a vital topic in Europe."

• **Details**—In a third of the British companies that McKinsey surveyed, even the fifth-ranking executive gets a company car. Many large British firms have so-called "top hat" pension plans that usually give the retiring executive a pension at least half, and sometimes up to two-thirds, of his final annual income. In the face of almost confiscatory surtaxes, an executive is otherwise hard put to build for retirement.

Managing directors in Belgian, French and some German companies frequently get a substantial profit-sharing bonus known as "tantieme;" for lower-level executives, there is often a "thirteenth-month" salary payment. French companies sometimes pay for executive apartments; German companies may make free loans for housing.

In Italy, where income taxes are often determined by individual conferences with the tax collector, cash counts for more. Pay levels appear higher, at least in large companies, and expense accounts can be lavish. In addition to reimbursed expenses, the Italian top executive often gets a big expense allowance (sometimes equal to his salary) which he does not have to account for very strictly.

Size makes a big difference, of course. In the McKinsey study, the chief executive of an Italian firm with the equivalent of $2-million in sales earns less than

turn the page

How U.S. Chief Executives' Pay Compares to Sales and Profits

Industry	1959 Compensation			1959 over 1958			1959 over 1953			
	Companies with net sales of									
	$30 million	$100 million	$400 million	Salary	Sales	Profits	Salary	Sales	Profits	Salary (no sales increase)
Business machines	$62,000	$103,000	$184,000	+12%	+12%	+ 9%	+41%	+132%	+172%	−18%
Electronics	68,000	94,000	135,000	+24%	+19%	+30%	+29%	+74%	+ 11%	+ 9%
Food	55,000	76,000	110,000	+13%	+ 2%	+20%	+13%	+ 56%	+ 19%	+ 8%
Industrial metal products	74,000	96,000	128,000	+ 6%	+ 9%	+ 8%	+14%	+ 44%	+ 42%	+ 5%
Machinery (except electrical)	65,000	90,000	130,000	+10%	+ 9%	+33%	+11%	+ 15%	+ 23%	+ 7%
Steel	57,000	95,000	171,000	+ 7%	+11%	+ 4%	+ 7%	+ 12%	+ 11%	0%
Textiles	71,000	89,000	115,000	+ 8%	+19%	+103%	−10%	+ 38%	+ 24%	+20%
All industry	61,000	88,000	133,000	+ 8%	+ 9%	+21%	+16%	+ 43%	+ 31%	+ 6%

half his American counterpart, whereas the head of a $40-million company earns 75% of the U.S. rate.

Though salaries are much lower in smaller companies, executive compensation is a much bigger burden for them—in relation to their financial resources—than for the larger companies.

II. U. S. Pattern

In its latest study of U.S. compensation practices, published in the *Harvard Business Review* (Sept-Oct), McKinsey & Co. traces changes over the past six years. Some of the results are shown in the chart. Pay shows a higher correlation to profits in 1959 than in 1953—possibly because of profit-related bonus plans. But sales volume, rather than profits, still has a closer relationship to the chief executives' compensation. McKinsey's Arch Patton says this shows the emphasis on growth in U.S. business.

The McKinsey study confirms what a lot of management people have suspected for a long time. The average company president's pay raise, 1953 to 1959, of 16% lagged behind the 24% increase in production workers' pay. Partly that was because of turnover. Nearly half the companies got new chief executives during the period; generally, a new man starts at a lower pay rate than his predecessor. Patton says executive turnover "may well prove to be the most significant finding of the current survey."

There is great variation between industries in the effects that sales and profits exert on compensation. Patton found a close relationship in the rubber, tobacco, and steel industries. For reasons that are obscure, there seems to be little relationship in air transport, producers of consumer durables, and large diversified companies. The electrical equipment industry was an anomaly in 1958-1959: Despite higher sales and profits over the period, chief executives' compensation actually declined. One reason, Patton says, was higher turnover in top management. Textiles was an anomaly over the 1953-59 period, with salary decreasing 10% while sales were increasing 38%.

• **Results**—One of the hardest questions to answer is what effect compensation has on performance. Patton was unable to discover any consistent pattern between high compensation and subsequent company profits. It may be that six years is too short a time span to show any relationship; studies covering longer periods have shown some evidence that higher profits generally follow higher pay. Also, there are other considerations beyond a "reward" to the top executive for superior performance. Without high payments at the top level, for instance, an unfair compression sets in at lower levels.

Another question that is hard to answer: How much bonus does it take to create an incentive? Industrial engineers have found that it takes a minimum of 20% bonus to spark substantial increases of motivation in the factory worker, and there is no evidence that managers will be motivated by anything less. The average bonus actually paid to U.S. company presidents is about 32%, and many experts recommend a minimum bonus opportunity of 40% to 60% at this level. In a new book called *Financial Incentives for Management* (McGraw-Hill, $8.50) a U. S. consultant named Richard D. Smyth suggests that middle managers should have the opportunity to earn 30% to 40% bonus above their salary, lower level managers 20% to 30% if the plan is carried that far. Smyth argues against setting a ceiling on bonus payments at the top level.

Stock-option plans are now so commonplace in American industry that some observers think they have lost their power to motivate key executives. As an attraction, however, stock options still carry weight. The real problem today is how a man can build a personal estate in the face of tax rates that apply at high income levels. For this reason, stock option, and such devices as deferred compensation, take on considerable importance: While the average gain is probably small, stock options have made quite a few executives into millionaires.●

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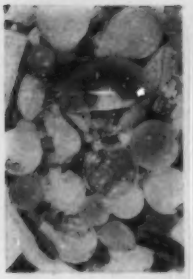
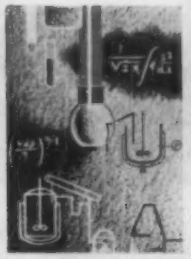
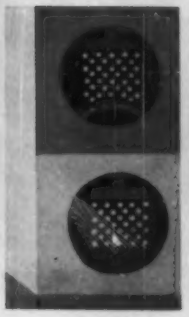


THE THIRTEEN PILLARS OF CONTINUITY

The drawback with specialising is lack of broad experience: the trouble with broad experience is lack of specialised knowledge. Fuse the two, however, and you create a dynamic force. In 1946 Philips was one of the largest electrical and electronic organisations - with unusually wide experience. In that year its core was put under the managerial microscope, examined and dissected into self-contained divisions, each controlling a separate group of Philips' rambling activities. These thirteen *specialist* divisions are the pillars on which the Philips Federation is balanced. Their function: to keep the federation on top in and through their particular fields. In this age of specialisation only the specialist can press ahead. He can press further when nourished by the resources and experience of a world federation of industries, with a common aim: to bring the unbounded resources of electronics to the service of all mankind.





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Why use fork-lift trucks to move *cheese*, you wonder? Well, these "wheels" weigh 200 pounds each. They *could* be rolled, *but* rolling ruins quality. So management of this giant four-acre Finnish factory insists they be *carried* from maturing shelves to washers to shipping docks. Between 40 and 50 hand-laborers used to be employed full-time. Today, 10 men and 10 CLARK trucks do the entire job—and production has been doubled to 100,000 wheels per year.

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Into the mill pond every MICHIGAN load go enough logs to make 2,000 lineal feet of 2 x 4's—major product of this Missoula factory. The MICHIGAN moves 300,000 board feet per day at speeds not possible either with other haulers or with highlining. Despite its great size, it operates as easily as your car, with fingertip power steer, power brakes, and automatic shift.

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Avenir M. Greig

Brazil's Managers Take to Seminars

BRAZILIAN BUSINESSMEN used to shrug their shoulders and joke about inflation. Now they are getting together in sober seminars at Sao Paulo's new Management Center do Brasil (MCB) to discuss inflation's effect on business.

Avenir M. Greig (above), General Manager of MCB, reports there has been "unanimous agreement" that long-range planning is "absolutely essential" to preserve profits in the wake of inflation. Few Brazilian companies plan five years ahead. "Through our seminars," Greig says, "we hope to make managers think more and more in terms of this approach."

In the Center's first months of operation (it opened in July), Greig organized seminars on profit planning, cost analysis, marketing, financial control, office costs, and Brazil's new minimum wage law. Greig is becoming an authority on Brazilian management practices:

"Granting that our technical resources are not the most advanced, production control seems to be a management strongpoint. Budget control procedures are rapidly being accepted and applied—at least by companies that have participated in MCB seminars. Adequate information for managers is high on the list of priorities; there is a lot to be done in this area because companies have not given the necessary attention to systems simplification and coordination. Management is beginning to understand the marketing concept—this is the 'new look' in Brazilian business."

• **Backing from U.S.A.**—Brazil's new management center owes its

existence to the International Management Association, an affiliate of the U.S.A.'s American Management Association. IMA has a revolving fund, created by contributions from the AMA and the Richardson Foundation, a U.S. philanthropic organization dedicated to business education. As the Brazilian center becomes self-sufficient, it will pay back to the IMA the costs of its founding. Then the fund will be used to start other centers.

"We know the pattern will work," comments Frederic E. Pamp, Jr., president of the IMA. "We feel the first step has been firmly taken in establishing a continuous exchange of management information on a world-wide basis. We now stand ready to discuss the possibilities of establishing similar centers elsewhere."

• **The Program**—Thus the Brazilian center is a showcase project. Unlike the AMA, the MCB will not have a membership; any top executive can participate by paying the seminar fee. The Center is set up as a non-profit organization, governed by a Planning Council. Some of Brazil's top executives sit on this.

The program will be based on the AMA formula, which has proved highly successful in the U.S.A. During the first year, the program will be gaged to meet the Center's break-even budget; this will mean about 30 seminars. By 1962, a full program of 60 seminars a year—32 men to each—will be operating.

Brazilian executives have taken to the seminar with enthusiasm. IMA President Pamp describes the performance of Howard P. Dutemple, Vice President of ULTRAGAZ: "He was a chairman in the best tradition of AMA. He gave a masterful general survey of the subject as an opening paper; tied the various talks together with summarizing comments; and presided with aplomb over several intense discussions."

Business research will be part of the MCB's program. A report concerned with selecting, training supervising, and compensating salesmen will be published next month; a survey of executive compensation will follow early next year. The Center will also translate material from the AMA's storehouse of data, and operate an information service on management problems. ●

Who's who in foreign trade

"Guarantees by Mitsui help our business develop!"

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"Mitsui's guarantees of quality, price, and shipping date have allowed us to increase our machinery imports from Japan, resulting in good business development for us. That's why we like to deal with Mitsui."

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The Multinational Corporation

They will be as common 25 years from now as national companies are today. Below, David E. Lilienthal* explores the problems tomorrow's top managers will face.

THE young men who will become corporate managers in the years to come must be educated in the problems of the "multinational" corporation. Being responsible for operations in a number of countries will, I would guess, be as common in 1985 as it is today for large companies to operate in many states of the U.S.A.

It is not necessary that the executive of the future spend most of his years working in a foreign country. But in one way or another he must learn the practical work-a-day aspects, as well as the principles, of multinational operations.

• **Problems**—The most serious problems are with governments. These must be the every-day business of the corporation manager. As we all know, a corporation is an artificial person, created by governments. The multinational corporation has multigovernments. The corporation itself may come from the territories of several governments—and which country is the "protecting power" of such an entity?

Legally, an immigrant corporation cannot call on its real parent for protection and support, as can the traveler abroad. Yet it must be able to rely on that parent to some extent without offending its new parent. Thus one can see how delicately the relationships between the old and new governments are balanced.

There is a further complication. The manager must learn to live with regional blocs. Two European blocs are already here. Others are coming. There is the Arab group; the Latin Americans have taken the first formal step toward a customers union. The Communists have one. The Asians are talking of one for their region. Africa will see the rise of different blocs and federations in the next quarter-century.

• **Conflicts**—The painful period is the transition—while the individual member countries continue with vigor as sovereignties, and the supranational authority is growing, often unevenly. Conflicts and contradictions must be expected. Accommodating to conflicts will be a part of the manager's daily tasks.

It is a frequent phenomenon in these times that the multinational corporation has as an actual partner the local government. Such a partner—even if not a majority participant and even with the sincere intention to act on a non-political basis—is still a government. Its representatives are government officers, and their superiors are ministers and legislative bodies. This blending presents each day potential obstacles of mistrust.

The managers themselves will have to join in creating protective and service machinery. Government bureaus must be encouraged. And there should follow the creation of joint governmental machinery. There should be international boards of trade, for instance. We should also have international agencies ready to help if and when—and it is well-nigh inevitable—the multinational corporation is in a controversy with the government on the scene of operation. In the next quarter-century, we may even see agreements among capital-exporting countries on investment guarantees.

• **Time for Planning**—Tax concessions are likely to be the major incentive offered the multinational corporation to go into a country. To varying degrees, these "incentive" laws often contain hindrances to foreign business. These, too, must be weighed before entering the country, and allowed for as items of effort and cost. The time for planning is before the exemption period begins. It is profligate to succumb to the blandishment of incentives without planning for the consequences after the incentives disappear.

In countries where the Anglo-American system of law does not prevail, there is less resistance to the idea of advance rulings, or agreements, on how to apply a law to a particular situation. Such agreements should be sought. Frequently, there will be a deliberate understanding not to press the agreement to the ultimate in clarity. This means continued government relations.

It is a mistake to regard these relations as time consuming nuisances. They are the serious business of senior managers. Sufficient time must be allotted to them, and—this is important—overhead cost calculations must take into account the high costs, in time and money, of such relationships.

The American corporation which goes abroad may run into its own antitrust laws; these laws apply to foreign corporations coming to the United States. As time goes on, we may expect conflict between U. S. laws and the antitrust laws of, say, Britain (or even those of the Common Market). Or there may be different standards, perhaps as unsettling to business. Thus we can expect multinational treaties on trade practices.

Managers will operate under a whole new set of economic relations, and without the secrecy of past years. Governments will have great knowledge of all their activities and affairs. It will be a great mistake for managers to waste their energies in resisting the essential principles of "full disclosure."

• **New Class**—Managers of multinational corporations and their families will form a new class. They will be trained in one of the most sophisticated outlooks in our world, that of the international businessman. Prejudice, parochialism, self-deception, chauvinism—all are inconsistent with the multinational corporation.

In the less-developed countries, the foreign manager must honestly seek to work himself out of his job. Venezuelans and Indians and Ghanaians will move to affiliated corporations in other countries, and become new citizens of the multinational corporate world.

This will give us the beginnings of a world-wide system of business ethics. In the main, I would guess that in Asia, Africa, and Latin America, managers will adopt the best of Western business ethics. ●

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* Chairman and chief executive officer, Development and Resources Corp, New York, former chairman, the Tennessee Valley Authority. Article adapted from *Management and Corporations, 1965*, soon to be published by the McGraw-Hill Book Co.

Quality - and what is behind it

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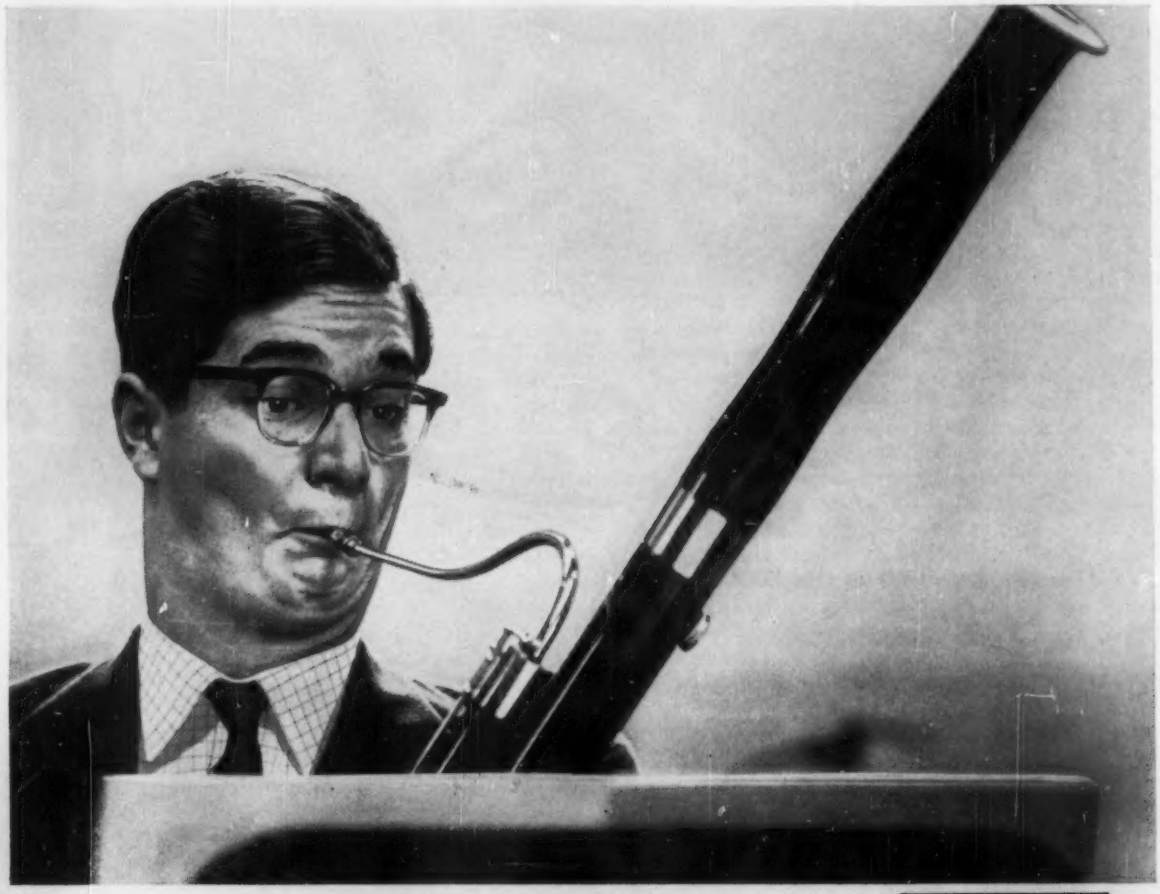

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In Management

THORP'S "LAW": To Parkinson's familiar edicts on business behavior, the world can now add a law discovered by professor Willard Thorp, who conducts seminars for leading thinkers at the U. S. A's Merrill Center for Economics.

"The right number for a discussion group varies inversely with the intensity of the interest those participating have in the subject being discussed. If all of the participants are so interested in the subject that they are filled to over-flowing, the maximum number of participants is eight. This is the maximum number that can all talk at the same time—and hear themselves."

OVERSEAS OPERATIONS work two ways, according to the U.S.A's Fairbanks-Morse & Co. The company, expanding in the U.K. and on the continent, has offered working scholarships to European students of commerce and economies. Three students are currently working for two to three months in the Fairbanks-Morse organization in the U. S.

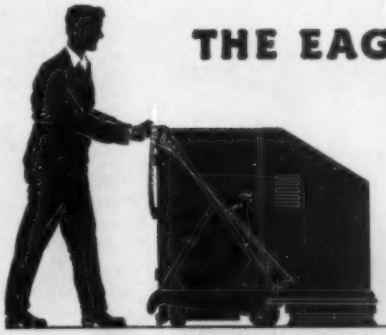
A FEW YEARS AGO, it would have been heretical for a dairy company to put out a margarine—"Margarine is our most dangerous competition, isn't it?" Today, it is no longer newsworthy.

Such decisions to compete with oneself have been explained mainly in terms of the need to diversify, or as an act of desperation—"If you cannot beat them, join them." According to one observer of the American business scene, however, internal competition is now becoming a deliberate management policy.

E. B. Weiss, a columnist for *Advertising Age*, maintains that such intra-organization competition has always existed. "It simply was not recognized as internal competition," Weiss says, "because the competitive cleavage was not as vividly distinct as that existing, for example, between woven rugs and hard-surface floor coverings. Moreover, it was not generally realized that competition for time, manpower, and finances is also a form of internal rivalry."

Turning down a proposal simply because it invites internal competition is to think unrealistically, Weiss argues. "It is now being understood that internal competition can be at least as healthy as external competition."

"MORE RESULTS for the money rather than more money for the results." This is the reaction of U. S. growth companies to mounting product development costs, according to Dr. Philip Marvin, research division manager of the American Management Associations. Although an AMA survey indicates research budgets are running an average of 10.7% ahead of last year, Marvin says there seems to be more concern with technology management — less with the "glamour" of product development. Last year, companies in the AMA survey spent an average of 3.7% of sales for product research. Leading industries: electronics, 7.7%; instruments, 6.1%; pharmaceuticals, 5.7%; construction machinery, 4.4%; office machines, 4.2%; chemicals, 4.0%. Others: textiles, 2.1%; engines and turbines, 1.8%; steel, 1.6%; paper 1.2%.



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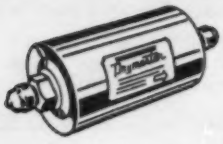

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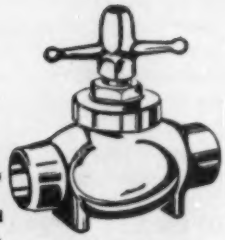

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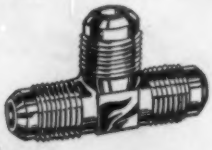

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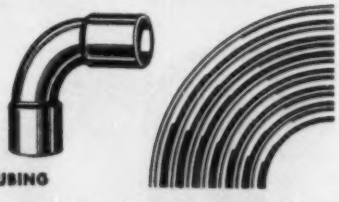

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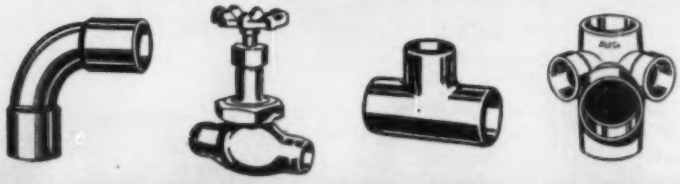

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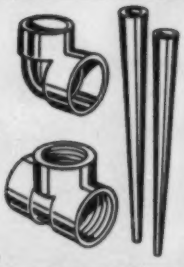

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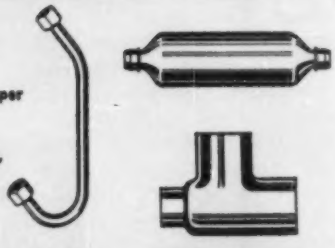
Mueller Brass Co. supplies formed copper tube and assemblies to customer's specifications. Complete facilities for swaging, bending, spinning, upsetting, flaring, flattening or sealing, beading and grooving, drilling, piercing, machining, joining . . . all at consistently close tolerances.



MUELLER BRASS CO.

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Cable address: Streamline

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For sugar and paper mills, breweries, distillers and other industrial applications, Mueller Brass Co. copper tubing is supplied to customer's specifications. Mixed groups of items can be packed for delivery to different job sites for any customer, eliminating rehandling costs.

276

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adding machine with multiplying-memory

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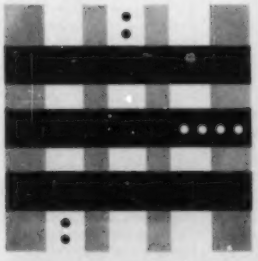
Addo-X Model 2341



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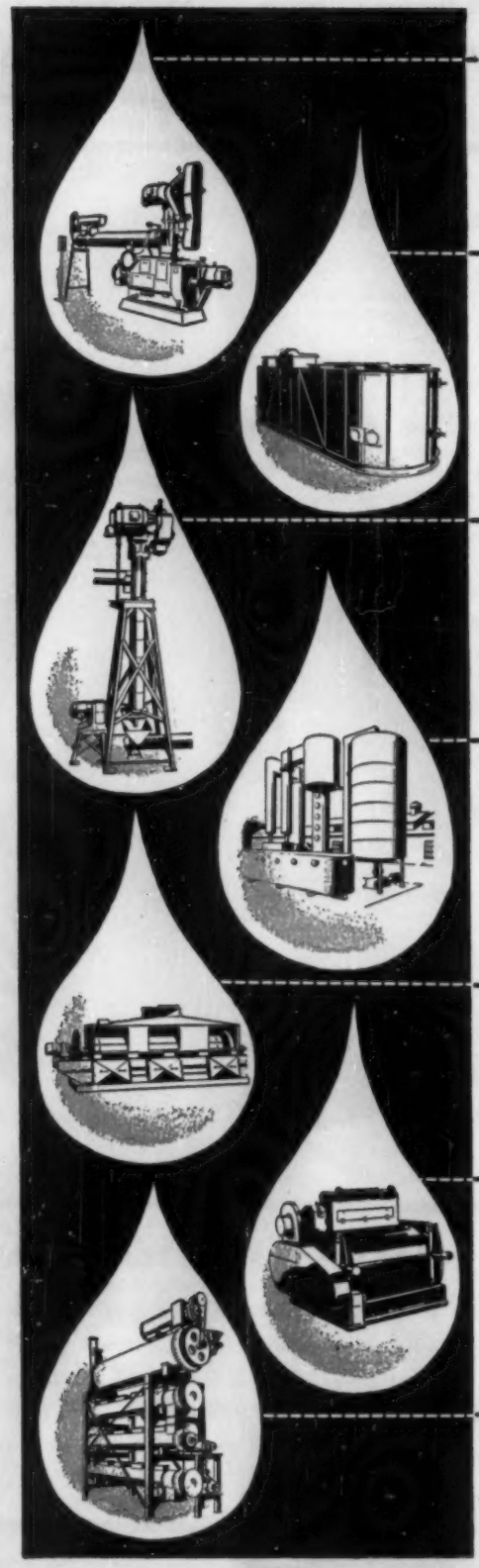

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in this issue

OVERSEAS EDITION

ADDO, AB 57
Agency—AB Wallin-Reklan Aukt, Annonsbyra

ALCOA INT'L INC.....4th Cover
Agency—Fuller & Smith & Ross, Inc.

ALLIS-CHALMERS INTERNATIONAL..... 7
Agency—Bert S. Gittins Adv., Inc.

ANDERSON CO., V. D..... 58
Agency—Will, Inc.

BRITISH OVERSEAS AIRWAYS CORP..... 5
Agency—Foote, Cone & Belding, Ltd.

BUNN CO., B. H..... 39
Agency—Robertson, Buckley & Gotsch Inc.

BUTLER MFG. CO..... 21
Agency—Aubrey, Finlay, Marley & Hodgson, Inc.

CHAIN BELT CO..... 42
Agency—Buchen Co.

CIMEX—FRASER TUSON LTD..... 55
Agency—City & General Adv. Ltd.

CLARK EQUIPMENT INT'L C. A..... 50
Agency—Marsteller, Rickard, Gebhardt & Reed, Inc.

COMBUSTION ENGINEERING INC..... 23
Agency—G. M. Basford Co.

DAIMLER-BENZ, A. G.....39, 53
Agency—Huemann, Werbegesellschaft MBH

DELAWARE RIVER PORT AUTHORITY.... 48
Agency—Al Paul Lefton Co., Inc.

DOW CHEMICAL INT'L LTD.....3rd Cover
Agency—MacManus, John & Adams, Inc.

FORD MOTOR CO., LTD..... 10
Agency—Rumble, Crowther & Nicholas, Ltd.

GARDNER-DENVER CO. 12
Agency—Buchen Co.

GENERAL ELECTRIC CO..... 44
Agency—Gotham-Vladimir Adv. Inc.

HITACHI LTD. 41
Agency—Dentsu Adv. Ltd.

IMPERIAL CHEMICAL INDUSTRIES..... 54
Agency—Clifford Martin, Ltd.

KULJIAN CORP. 60
Agency—Roland G. E. Ullman Organization, Inc.

LUFTHANSA GERMAN AIRLINES.....34, 35
Agency—Charles W. Hoyt Co., Inc.

MINNESOTA MINING & MFG. CO..... 31
Agency—Batten, Barton, Durstine & Osborn, Inc.

MITSUI BUSSAN KAISHA, LTD..... 51
Agency—Hakuhodo Advertising Agency Inc.

MONSANTO CHEMICAL CO..... 59
Agency—Gotham-Vladimir Adv. Inc.

MUELLER BRASS CO..... 56
Agency—Price, Tanner & Willcox, Inc.

OHIO CRANKSHAFT CO..... 11
Agency—Carr Liggett Adv., Inc.

OWATONNA TOOL CO..... 28
Agency—E. T. Homeren, Inc.

PHILIPS GLOEILAMPENFABRIEKEN 49
Agency—Smit's Advertising

REGIE NATIONALE RENAULT..... 14
Agency—Promos Publicite

REMINGTON RAND INT'L.....2nd Cover
Agency—Robert Otto & Co.

ROLEX WATCH CO., LTD..... 8
Agency—J. Walter Thompson Ltd.

SHELL INT'L CHEMICAL CO., LTD..... 43
Agency—Auld & Tilbury, Ltd.

TOLEDO SCALE CO..... 29
Agency—Beeson-Reichert, Inc.

UNION CARBIDE INT'L CO..... 13
Agency—National Export Adv. Service, Inc.

UNITED STATES STEEL EXPORT CO..... 25
Agency—Batten, Barton, Durstine & Osborn, Inc.

VIKING PUMP CO..... 40
Agency—Wesley Day & Co., Inc.

WALLACE & TIERNAN, INC..... 32
Agency—Branstater Associates, Inc.

WESTINGHOUSE ELECTRIC INT'L CO...26, 27
Agency—Gotham-Vladimir Adv., Inc.

YODER COMPANY 46
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McGRAW-HILL INTERNATIONAL MANAGEMENT'S

Recommended Reading

NEW BOOKS

THE THEORY OF THE GROWTH OF THE FIRM, by E. T. Penrose, discusses the factors that make an enterprise grow, and the limits to its rate of growth. According to the author, the main growth factor involves excess managerial capacity. The book is instructive—and though theoretical, is full of ideas. *Basil Blackwell & Mott Ltd., 49 Broad Street, Oxford, England.* 280 *pages, 35s or* $4.90.

Management techniques, and how they can be applied in small plants, is the subject of a new book, SMALL PLANT MANAGEMENT, edited by W. A. MacCrehan, Jr. It discusses financing and banking, plant organization, and the principles of scientific management. *McGraw-Hill Book Co., 330 West 42nd Street, New York 36, N.Y., U.S.A.* 560 *pages,* $10.50.

HOW TO RUN PENSION AND PROFIT-SHARING PLANS, by William J. Casey, lists the factors to consider in deciding between a pension and a profit-sharing plan, what objectives each serves, and how to design and operate a plan to meet company requirements. *Institute for Business Planning Inc., 2 West 13th Street, New York 11, N.Y., U.S.A.* $12.50.

In a new AMA report, RISK MANAGEMENT TODAY, managers and insurance company representatives discuss current trends in company group insurance programs, workmen's compensation coverage, and the health care needs of the aged. *American Management Association, 1515 Broadway, New York 36, N.Y., U.S.A.* $3.00.

THE PROCEEDINGS OF THE 1960 INSTITUTE ON LEGAL ASPECTS OF THE EUROPEAN COMMUNITY have been published by the U.S. Federal Bar Assn. These reports analyze the legal, political and economic developments in the organizations comprising the Community, and discuss the problem of business organization, taxes, financing, patents, trademarks, and antitrust laws. *Federal Bar Association, 1737 H Street N.W., Washington, D.C.* $10.00.

PUBLIC RELATIONS AND MANAGEMENT, by David Finn, provides a realistic view of what public relations can and cannot do for a company. The author explains how PR fits into the management scheme, how it works, and how it can be appraised and controlled. *Reinhold Publishing Corp., 430 Park Avenue, New York 22, N.Y., U.S.A.* 192 *pages,* $4.50.

DIRECTORIES, REFERENCES

The Small Business Administration in Washington has issued a SUPPLIERS DIRECTORY listing nearly 2700 U.S. companies interested in doing development, engineering, and manufacturing work on a contract basis. Company names, addresses, and capabilities are included. *Small Business Administration, Office of Information, Washington 25, D.C. U.S.A.*

MINERAL FACTS AND PROBLEMS is a comprehensive survey of U.S. mineral and fuel resources. The sources, technology, and uses—past, present and future—are discussed. *Supt. of Documents, Government Printing Office, Washington 25, D.C., U.S.A.* 1,016 *pages,* $6.00.

The United Nations' DEMOGRAPHIC YEARBOOK for 1959 provides detailed world population statistics—data on area, density, growth rates, marriage, divorces, births, deaths, and life expectancy. *United Nations, New York, or United Nations Office, Sales Section, Palais des Nations, Geneva,* 736 *pages,* $8.00 *or the equivalent, paperbound.*

THE OVERSEAS BUYERS' GUIDE TO SAN FRANCISCO lists over 1,500 California firms engaged in international trade. Each listing gives the name, address, and principal officer of the company, and a description of the types of goods produced. *World Trade Department, San Francisco Chamber of Commerce, 333 Pine Street, San Francisco 4, California, U.S.A.* 131 *pages.*

WHO MAKES MACHINERY? 1960 is a guide to German machinery manufacturers. It lists 10,000 types of machines, plus a classified guide to producers giving names, addresses, tradenames. *Nordeman Publishing Co., Inc., 350 Fifth Avenue, New York 1, N.Y., U.S.A.* $3.50.

Answers to problems of corporate practice and procedure are given in the DIRECTORS' AND OFFICERS' ENCYCLOPEDIC MANUAL. Alphabetically arranged, the manual covers such subjects as corporate finance and law, accounting procedures, and practical office methods. *Parker Publishing Company, Englewood Cliffs, N.J., U.S.A.* 641 *pages,* $12.50.

REPORTS, PAMPHLETS

Two timely studies by the McGraw-Hill Economics Dept.: BUSINESS PLANS FOR NEW PLANTS AND EQUIPMENT 1960/1963 reports on how much U.S. business plans to spend on new plants, equipment, modernization, research, and new products and processes. And FOREIGN OPERATIONS OF U.S. INDUSTRIAL COMPANIES 1960-1961 (IMD, Oct p2) is a survey of how much U.S. firms plan to spend abroad on new manufacturing facilities, and where they plan to spend it.

A report by the editors of *Factory* (Sept., p109) tells how to control plant noise. $0.50.

HUMAN ENGINEERING contains 14 articles that have appeared in McGraw-Hill's *Product Engineering* on the subject, plus a bibliography and a

listing of pertinent organizations and research centers. $1.50.

(For copies of the above McGraw-Hill reprints, write to The Editors, INTERNATIONAL MANAGEMENT, *and your request will be forwarded to the publication in question.)*

The First National City Bank's new study EUROPE TODAY provides the latest information on labor supply, wage rates, investment incentives, and the market potential of the six EEC nations. *The First National City Bank of New York, 55 Wall Street, New York* 15, *N.Y., U.S.A.* 40 *pages.*

INDUSTRY BULLETINS

TABULATING CARD FILES AND SUPPLIES describes Remington Rand's mechanized filing equipment for efficient card handling. *Remington Rand Intl., 315 Park Avenue South, New York* 10, *N.Y., U.S.A.*

Ninety-four organic and inorganic chemicals for industry and agriculture are reviewed in a quick reference digest. *Hooker Chemical Corp., 2600 47th Street, Niagara Falls, New York, U.S.A.*

BLOW MOLDING: HOW TO OBTAIN HIGHEST QUALITY AND PRODUCTION RATE explains how changes in polyethylene resin properties and extrusion and molding factors affect the properties of blow-molded items. *U. S. Industrial Chemicals Co., 99 Park Avenue, New York* 16, *N.Y., U.S.A.*

Personal Business

The liquid meal

Weight-conscious Americans are given to dieting fads that periodically sweep the country. The latest is the "liquid meal"—a commercial product that may be coming your way under such brand names as Metrecal, Minvitine, Calorid, Quota, etc.

The meal is made from a food concentrate that is mixed with water. The concentrate is usually bought in powdered form; a liquid version packaged in a "one meal" size has just been introduced. A typical preparation contains skim and whole milk, soya flour, sugar, starch, corn oil, coconut oil, yeast, vitamins, minerals, and flavoring (coffee, vanilla, etc.). A "one-day" supply—900 calories—provides 70 grams of protein, 20 grams of fat, 110 grams of carbohydrates.

Ideally, formula diets should be used under a physician's direction—and there are some strong medical reservations to the new liquid meals. But few dieters heed this advice. Probably most dieters take their liquid meals only at lunch (they are even served at ice-cream stores, mixed like a milk shake).

Advances in audio

"Bookcase" loud speakers—small, enclosed units with high fidelity performance—are now on the market. They are made possible by technical refinements and by using three speakers—low, mid-range, and high range (up to 25,000 cps). They are well suited for stereophonic sound systems where the speakers should be at least 3 meters apart. Note: Most stereo systems now come wired for a third speaker channel. Will fourth and fifth speakers come next?

A new record changer by Garrard of Britain has features previously available only on non-changing turntables. Most important are a counterbalanced stylus arm, and better insulation. Price: About $65.

The trend in stereophonic recording is toward less distinction between the two channels. Early recording, alternating like the chorus of a Greek play, dramatically demonstrated the two-channel effect.

Advances in photo

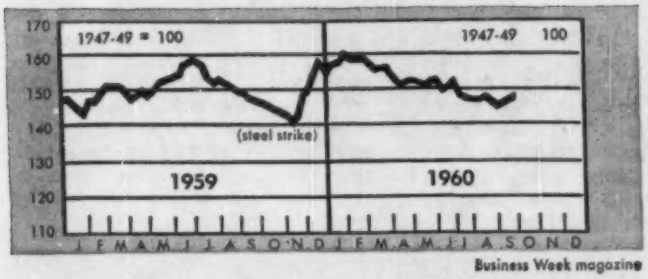
Automatic-exposure controls for still cameras were unveiled at Cologne's Photokina show. All you have to do to take a picture is select a shutter speed and press the shutter release. The control device automatically selects a diaphragm aperture that matches the shutter speed with the available light. If the light is too dim or too intense, an indicator registers a warning in the viewfinder. First cameras with the control are the Agfa Optima II-S and Kodak Retina Automatic III. Prices are in the $100 to $130 range.

Ernst Leitz GmbH, makers of the famed 35 mm Leica, has announced a full line of home movie equipment and projectors. First product is an automatic 8 mm model with two interchangeable lenses in a bayonet mount. Next will come a "zoom" lens—a lens that changes smoothly from a distance to a close-up shot. Agfa announced a new "zoom" 8 mm model with reflex viewing, and no film threading. Cassettes containing plain and color film are dropped into the camera, interchanged at will.

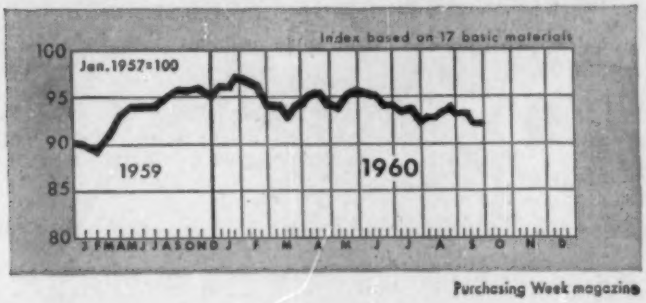
Electronic kits

For the budding engineer in your family: A series of seven electronic kits that teach the rudiments of electronic circuitry, complete with instruction books. The more advanced components, including a miniature digital computer, require several of the previous constructions plus an additional kit. The kits and prices: test meter, $25.50; two-station intercom, $59.50; AM and FM tuners, $39.50 each; dual-head tape unit, $39.50; telemeter, $49.50; computer device, $59.50. Available from Strato Engineering Co., Burbank, California.

Business at a Glance



Business Week magazine



Purchasing Week magazine

U.S. Business Trend

Business Week's index turned up in early October, tending to confirm the optimists' belief that output is holding up despite severe adjustments in the economy (see page 1). A good sign. But a three-week recovery on the index does not make a boom; many doubt the rise will continue. Certainly industrial raw materials prices in the U.S. show no signs of it (see below).

U.S. Commodity Trend

No signs of strength in raw materials prices in the U.S. – or in Europe, where demand seems slower. Metals are weak (lead, zinc, copper, may ease more; aluminum suffers from what Aluminium Ltd. calls the "current weakness in North America"). Fibers – wool, jute, cotton – look better, but not much. Meanwhile, U.S. purchasing agents worry about their "skin-tight" inventories if an upturn comes.

A QUICK REVIEW OF EXCHANGE, CREDIT, AND BUSINESS CONDITIONS

Country	Exchange Rate (units per $1, New York) October		September, 1960	Government Reserves (gold & foreign exchange, millions) latest month	November, 1959	Dollars in U.S. Banks (Millions)	Conversion Delays / Collection Experience		Business Conditions
Argentina	82.50	Peso	82.00	$ 559.0	$ 221.0	$ 394.0	2 Mos.	Fair-Good	Fair-Good
Australia	• 2.23	Pound	• 2.23	1,147.0	1,173.0	107.0	None	Very Good	Very Good
Austria	25.64	Schilling	25.64	703.0	700.0	197.0	None	Good	Good
Belgium	50.00	Franc	51.28	1,188.0	1,334.0	172.0	None	Very Good	Good
Bolivia	12,000.00	Boliviano	12,000.00	8.3	8.4	20.3	2 Mos.	Fair-Poor	Fair-Poor
Brazil	187.00	Cruzeiro	185.00	417.0	450.0	162.0	3 Mos.	Good	Good
Canada	.9804	Dollar	.9708	1,844.0	1,871.0	2,686.0	None	Very Good	Good
Chile	1.05	Escudo	1.05	112.7	105.2	131.6	2 Mos.	Good	Fair-Good
Colombia	6.95	Peso	6.67	193.0	179.0	185.0	2 Mos.	Good	Good
Costa Rica	6.67	Colon	6.67	14.63	16.6	18.9	1 Mo.	Good	Good
Cuba	3.25	Peso	3.25	352.0	294.0	120.0	3 Mos.	# L/C Basis	Poor
Denmark	6.78	Krone	6.78	233.2	282.0	72.1	None	Very Good	Good
Dom. Rep.	1.01	Peso	1.01	47.0	40.7	35.5	None	Very Good	Fair-Good
Ecuador	17.40	Sucre	16.67	43.2	40.7	21.7	1 Mo.	Fair-Good	Fair-Good
El Salvador	2.50	Colon	2.50	35.1	37.9	27.3	1 Mo.	Fair-Good	Good
Finland	312.00	Markka	312.00	307.4	317.1	64.3	None	Good	Good
France	4.90	Franc	4.90	2,098.0	1,793.0	650.0	None	Good	Good
Germany	4.17	D-Mark	4.17	6,506.0	5,608.0	2,704.0	None	Very Good	Very Good
Greece	27.80	Drachma	27.80	222.7	202.8	97.3	1 Mo.	Fair-Good.	Fair-Good
Guatemala	1.01	Quetzal	1.01	41.0	38.7	39.5	1 Mo.	Good	Fair-Good
Honduras	2.00	Lempira	2.00	15.1	15.8	12.8	1 Mo.	Fair-Good	Improving
India	6.67	Rupee	7.10	555.0	676.0	55.0	1 Mo.	Good	Good
Indonesia	200.00	Rupiah	200.00	358.0	276.0	158.0	–	# L/C Basis	Poor
Iran	76.92	Rial	76.92	203.0	198.0	35.0	3 Mos.	Fair-Good	Good
Iraq	• 2.75	Dinar	• 2.75	295.6	302.5	18.0	2 Mos.	# L/C Basis	Fair-Good
Israel	2.22	Pound	2.22	183.8	121.2	68.0	1 Mo.	# L/C Basis	Good
Italy	617.00	Lira	617.00	2,877.0	3,116.0	1,095.0	None	Very Good	Good
Japan	380.00	Yen	380.00	1,569.0	1,291.0	1,502.0	None	Good	Good
Mexico	12.35	Peso	12.35	396.0	391.0	390.0	None	Good	Very Good
Netherlands	3.74	Guilder	3.74	1,465.0	1,350.0	387.0	None	Very Good	Good
New Zealand	• 2.65	Pound	• 2.65	289.0	249.0	6.8	None	Very Good	Good
Nicaragua	8.00	Cordoba	8.00	11.1	10.9	12.5	None	Very Good	Good
Norway	7.10	Krone	7.10	264.2	242.4	88.2	None	Very Good	Fair-Good
Pakistan	6.25	Rupee	6.80	390.0	189.0	23.5	2 Mos.	# L/C Basis	Fair
Panama	1.00	Balboa	1.00	37.9	45.7	123.2	None	Very Good	Good
Peru	27.40	Sol	26.66	64.0	55.4	82.2	1 Mo.	Good	Good
Philippines	3.30	Peso	3.30	143.0	89.0	216.0	1 Mo.	# L/C Basis	Fair-Good
Portugal	26.66	Escudo	26.66	773.0	792.0	88.0	None	Very Good	Good
South Africa	• 2.78	Pound	• 2.78	278.0	407.0	36.0	None	Very Good	Good
Spain	60.00	Peseta	59.80	464.0	138.0	131.0	–	# L/C Basis	Improving
Sweden	5.13	Krona	5.13	476.0	439.0	252.0	None	Very Good	Good
Switzerland	4.31	Franc	4.29	2,088.0	1,909.0	874.0	None	Very Good	Very Good
Turkey	11.90	Pound	11.90	252.0	265.0	18.0	–	# L/C Basis	Fair
U. A. R.	• 2.15	Pound	• 2.15	273.0	375.0	46.0	–	# L/C Basis	Fair
U. K.	• 2.8150	Pound	• 2.82	3,108.0	2,974.0	1,727.0	None	Very Good	Good
Uruguay	11.11	Peso	11.11	214.0	180.0	55.0	2 Mos.	Poor	Fair
Venezuela	3.34	Bolivar	3.34	653.0	689.0	355.0	1 Mo.	Fair-Poor	Good

*U.S. Dolla.. pe. Pound #Most Exports by Letter of Credit

McGRAW-HILL INTERNATIONAL MANAGEMENT'S

Last-Minute Memos

African Aid: A technical-economic consulting service has been set up by West Germany's "Africa Club" to advise developing countries on the organization of small and medium industries. Engineers sent to Africa will examine local resources, and then submit their recommendations to both German and African businessmen.

Better Business: Latin America's second "Better Business Bureau", Asociacion Venezolana de Etica Comercial, has been set up in Caracas and admitted to membership in the Association of Better Business Bureaus, New York. Latin America's first such bureau was Etica Comercial, A.C., founded in Mexico City two years ago (IMD—Apr, p45).

Musical Corn: Music not only has charms to soothe the savage beast, but it can make corn grow faster. Experts at U.S.A.'s Corn Industries Research Foundation report that East Indians, playing a flute daily to a group of corn plants, have induced the stalks to grow 25% to 50% faster than those outside the sound of the music.

Plastic Typing Ribbon: A polyethylene typewriter ribbon developed by International Business Machines Corp., U.S.A., is said to produce a more accurate print than fabric ribbons or previous plastic ones. IBM says that the new ribbon, priced at $12.50 per dozen, will make possible fancier type faces than were available before.

Francs for Research: Year-by-year increases in the French budget will boost the government's research spending by 1962 to twice the 1958 level, according to Pierre Piganiol, top man for research in the de Gaulle administration. At a meeting of 450 French research executives, Piganiol estimated the government's research for 1960 at about $200-million (20,000-million francs). He anticipated an increase of over 10% for 1961, and an equally impressive increase for 1962. The French will focus on weak spots in their past research effort—energy conversion, oceanography, space exploration. The government plans to spend 100-million francs to set up a national scientific-information collecting center.

Heat to Electricity: The latest development in the direct conversion of heat to electricity is a thermoelectric alloy of silver, antimony, and tellurium developed by U.S.A.'s Bell Telephone Laboratories. The alloy, which has unusually good conductivity and electronic properties, is expected to replace lead and bismuth tellurides in heat-to-electricity devices.

Back-Door Financing: A car dealer in Middlesex, England, has come up with a scheme for getting around the government's credit restrictions. A buyer may rent a car for 21 years, pay off the cost in the first 5 years, then continue "rental payments" at a penny a month for the next 16 years.

World Rubber Institute: Fourteen synthetic rubber companies in the U.S., Canada, Britain, and West Germany have joined forces to encourage research and promote world trade in synthetic rubber under the newly formed International Institute of Synthetic Rubber Producers.

Swiss-Indian Lab: Switzerland has offered to help set up a precision instruments laboratory in Delhi, India. In addition to financial assistance, the offer includes the services of eight Swiss precision tool experts for a period of five to six years.

British Merger: Increased competition and narrowing profits in the electrical industry may lead to a merger of two of Britain's big three electric companies, English Electric Co. and General Electric Co. Ltd. In a recent joint statement, the companies call attention to "the general position of the British electrical industry" and agree "to explore immediately the practicability of a merger." Both companies cover the full range of electrical equipment, from appliances to atomic power plants. If they merge, the new company would have net assets of the equivalent of $495-million; this would top Associated Electrical Industries, which has net assets of $465-million.

More Fuel Cells: Two new fuel cells make their debut this month from British and U.S. laboratories. In Britain, Shell Petroleum says that it has built a low-temperature hydrogen-oxygen cell that features "radically different" electrodes, which are cheap and easy to fabricate. In the U.S., Thompson Ramo Wooldridge Inc. has a compact (90 kilos) cell that regenerates its own fuel and produces 500 watts of power for 60 days.

Soviet Petroleum: U.S. experts who recently spent a month in Russia were deeply impressed with the "tremendous potential" of the Soviet petroleum industry. The Russians not only have large reserves of crude, but also "the ability to produce them," says William Keeler, executive vice-president of Phillips Petroleum Co. and chairman of the group that studied the Soviet industry. Unanswered, says Keeler, was one big question: What will be Soviet intentions and capabilities regarding petroleum exports during the next few years?

Italy-Soviet Exchange: Russian goods, including carpets, lace, embroidery, and curtains soon will be on sale in Italian department stores, according to a McGraw-Hill report from Milan. This will be the first delivery of Russian goods under an agreement providing for exchange of $1.6-million worth of consumer goods. Italy will send textiles, dresses, footwear to U.S.S.R.

Facsimile Mail: The U.S. post office is testing the sending of mail by facsimile. During a 30-day test, government letters were put on special forms, then opened and transmitted by machine. At the receiving end, machines printed and re-sealed the letters.

Equity Investments for IFC: President Robert Garner of the International Finance Corp. has asked for, and is expected to get, approval from his Board of Governors to make direct equity investments. A World Bank affiliate, the IFC is devoted to encouraging private enterprise; its charter has forced the agency into complicated and misunderstood patterns of debt financing (IMD, Oct). Besides making direct investment, the IFC plans to underwrite issues of company shares on local capital markets.

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